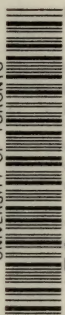



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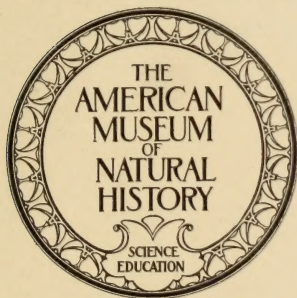


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ANTHROPOLOGICAL PAPERS
OF
THE AMERICAN MUSEUM
OF NATURAL HISTORY

VOL. XVIII

THE ARCHER M. HUNTINGTON SURVEY OF THE SOUTHWEST
ZUÑI DISTRICT



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1919



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GENERAL INTRODUCTION

The Archer M. Huntington survey of southwestern United States was taken up at Mr. Huntington's suggestion in 1909 and has continued without interruption to the present. The fundamental objective of this investigation was the establishment of a chronology for the cultures of the Southwest. To this end, studies were made among the surviving natives as well as upon the remains of prehistoric peoples. At the outset it was assumed that the Rio Grande Valley was an important center of development for the historic type of Pueblo culture, and in consequence, the Rio Grande district was chosen as the primary base for field exploration. The surviving Pueblo villages of the district were intensively studied by Dr. Herbert J. Spinden and many of the abandoned and prehistoric villages were thoroughly investigated by Mr. N. C. Nelson. The results of the whole survey to date indicate that the initial assumption as to the location for the Pueblo center was wholly justifiable. Consequently, this district is still the major unit of the survey, and its satisfactory completion will require several more years of field study.

One of the secondary problems projected was a parallel study of the Zuñi Pueblo and the surrounding district. The first stage of this inquiry has been completed and is reported in this volume, which thus becomes the initial unit in the Huntington Survey series. Here also the living people were studied, then the ruined villages, and a correlation of the two developed.

The other secondary investigations may be enumerated for the sake of completeness. The nomadic peoples are under investigation by Dr. P. E. Goddard; the tribes of the higher plateaus north of the Colorado and the Hopi, by Dr. R. H. Lowie, and the prehistoric villages in the San Juan Area by Earl H. Morris. The last is an undertaking of great magnitude, dealing with a prehistoric culture center that laid the foundations for the later Pueblo development of the Rio Grande Valley. The results of these investigations will appear in later volumes, making a detailed statement of methods and results unnecessary here.

The Zuñi problem, the subject of this volume, can be stated in simple terms. The Zuñi were living on the present site when first described, but there are many adjacent ruins that seem to antedate the historic site. We must, therefore, seek the relation of one to the other. The solution then lies in developing a method by which the relative

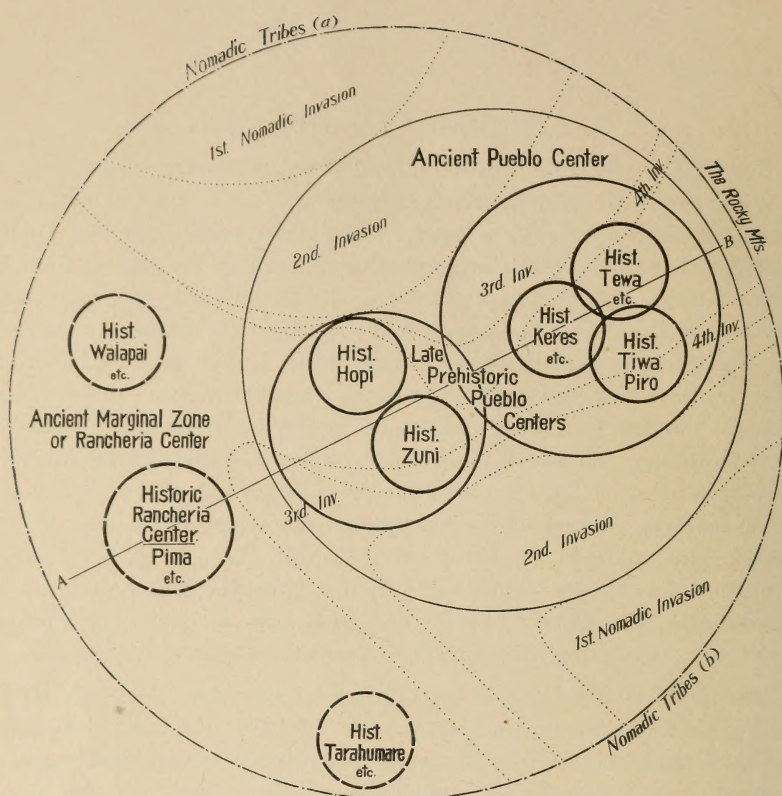


Fig. 1.

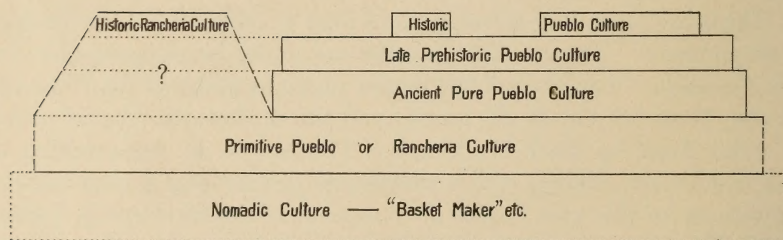


Fig. 2.

Nelson's Diagrammatic Scheme for demonstrating the Geographical and Chronological Relations in the Cultures of the Southwest—(Proceedings of the National Academy of Sciences, 1919).

Fig. 1. Geographical Position of Culture Centers.

Fig. 2. Chronological Section on a Line a-b.

CHRONOLOGY OF THE ZUNI DISTRICT

Periods	Ceramic Characters
8. Modern Zuñi (1680—)	Modern painted ware
7. Historic Zuñi (1540-1680)	Historic painted ware Some glaze
6. True pueblo architecture a. Moves to Zuñi (?-1540)	Buffware appears Plain black
5. True pueblo architecture a. Moves to Silver Creek (Holbrook)	Buffware and plain black begin here
4. True pueblo architecture a. White Mountain Group b. Ramah Group becomes extinct	Glazed ware from Rio Grande
3. Small pueblos a. White Mountain Group b. Ramah Group	Three-color painted Corrugated giving way to red Black-on-white constant
2. Small rectangular houses	Corrugated, black-on-white, and black-on-red pottery
1. Slab-house period	Corrugated pottery Black-on-white pottery

CHRONOLOGICAL PERIODS IN THE SOUTHWEST

	Ceramic Periods for the Rio Grande and Colorado (Nelson)	Zuñi Chronology (Spier)
1680- 1540-1680 ?-1540 Pueblo Period	6. Modern painted ware 5. Historic glazed ware 4. Full glazed ware 3. Early glazed ware 2. Full black-on-white ware (Aztec and Bonito)	8. Modern Zuñi 7. Historic Zuñi 6. Early Zuñian (a ⁴) 5. Silver Creek (a ³) Ramah now extinct 4. White Mountain (a ²) and Ramah (b ²) 3. White Mountain (a) and Ramah (b)
Transition Period	1b. Archaic black-on-white ware 1a. Basket Makers, Pottery absent	2. Rectangular house culture 1. Slab-house period culture ?
Nomadic Period	Primitive Nomads (?) Pottery and agriculture absent	?

ages of these ruins can be determined and correlated with Zuñi itself. The Zuñi of today represents the last stage in the historical evolution of one Southwestern culture; hence, the logical procedure seems to be to work backward from Zuñi through the ruins.

Work was begun at Zuñi in 1915 by A. L. Kroeber, Professor of Anthropology at the University of California. A careful study of the town was instituted, to find out just in how far the material growth of this primitive city was an expression of the culture of its people. The presentation and discussion of this investigation forms the major paper in the volume. Professor Kroeber also examined the ruins and sought to form a tentative idea as to their relative ages by sampling the potsherds found in them and submitting these to statistical methods, the reliability of which had been tested in many sciences. With this as a beginning, Mr. Leslie Spier took up the specific dating of these ruins. The methods employed and the results obtained are presented under the proper heads; but we may summarize the conclusions by tabulating the chronology of the district, as in the accompanying table. It is thus apparent that the definite house remains of the district fall into eight successive periods, each of which seems to be an outgrowth of the others. The most definite index to this chronology is found in pottery forms and decoration, as is the case in many other parts of the world.

The establishment of this chronology is an important achievement and makes for progress, but obviously Zuñi did not work out its career in absolute isolation, for its growth was a mere part of the whole Pueblo development. Mr. N. C. Nelson also achieved a chronological scale for the Rio Grande district, which, in conjunction with the work of Mr. Earl H. Morris in the San Juan Valley, gives what appears to be the primary chronological sequence for Pueblo culture as a whole. Fortunately, the commendable independent work of Dr. A. V. Kidder in the mountains of Colorado and Utah, completes the story, so that the general outline of culture history for the Southwest now stands revealed. So by combining the tables of Nelson and Spier we get the time-relations expressed in the second tabulation.

Finally, as a synthetic presentation of the cultural relations in the Southwest Mr. Nelson has developed a diagrammatic chart, showing both the contemporaneous relations of the culture groups and their chronological origins. This diagram is based upon the well-known facts of culture distribution, and the observed tendencies for marginal cultures to present the more archaic forms and thus stand as indices of the

older culture level. As has been pointed out by many students of culture, once the center of a culture has been located, its earlier forms can be inferred from the surviving marginal traits. Thus, the Huntington Survey presents a conclusion as to the chronology of the Southwest that is fully consistent with the workings of culture in general, but is also based upon correlated and verifiable empirical observations. Not only were the horizontal correlations of Fig. 1 carefully determined by surface surveys, but typical sections (Fig. 2) were made to verify the chronological relations the surface indications suggested. Without such verification the results could not be taken with confidence.

The preceding tables and Nelson's diagrammatic scheme, which is but another method of presenting the same, give us a fairly complete outline of the development of culture in the Southwest, localizing some of the related centers of initiation and their diffusion areas as well as demonstrating their sequence. But relative chronologies are never satisfactory unless translated into terms of the calendar and it is quite right that an answer to the question "how long?" should be expected. There has been a great deal of confusion in the comprehension of New World culture due to the persistent shirking of anthropologists when confronted with this problem. It is therefore the duty of the writer, at least, to show in what way and with what precision the periods in these tables can be dated.

There are a few historical facts that give us initial dates for the series. History in the Southwest begins with the Spanish exploration of the territory about 1540. Subsequent events give us other definite points, but for the remaining nine-tenths, or more, of the sequence presented in the table, we have no such time data. Yet, we do have sources from which these intervals can be estimated in terms of the known tenth. Nelson's diagram presents the steps from one culture to the next as if equal; but this is not his intention or belief. It is common historical knowledge that the evolution of culture and, in fact, all organic things, has been accelerating with time. The tabulation of a few epoch-making events in Old World culture with the dates assigned thereto makes this clear. Counting backward from the present century, we obtain the time intervals indicated in the adjoining table. From this it appears that it took much longer to pass from flint chipping to fire and again to painting, than from iron to steam power and the more recent inventions. Thus not only the presence of acceleration is made evident, but its rate of progression is indicated.

CHRONOLOGY OF GREAT EVENTS IN THE CULTURE OF THE OLD WORLD

	Yrs.
Use of steam power	200
Printing and gunpowder	1,000
Use of iron	3,500
Use of bronze	6,000
Domestication of the ox and horse	10,000
Agriculture and pottery	12,000
Bows and arrows	14,000
Spear-thrower and the harpoon	20,000
Fine flint chipping	25,000
Beginning of painting and sculpture	35,000
Mortuary offerings	50,000
Use of fire and the <i>coup de pong</i>	100,000
Beginning of flint chipping	125,000
Precursors of man	500,000

A curve could be plotted to express this acceleration of culture's evolution, though not with mathematical exactness. Nevertheless, the principle is there. Nelson's diagram gives us the relative geographical spread of the older and later ceramic traits for the whole Southwest, in which the same principle of culture acceleration is in evidence. Hence, it is possible to form an estimate of the respective time intervals that is more than a mere guess. From the diagram we see that the period of primitive Pueblo culture stands to the later period as about 3:2. The age of the later period can be estimated from the table where it appears that full-glazed ware dates back about four hundred years. On the basis of distribution, the interval to full black-on-white must be at least three times as long, or twelve hundred years. Sixteen hundred years is then the total interval, but the development period of primitive Pueblo cultures must have been still longer than the preceding, say, thirty-two hundred years. Then if we contemplate the rise of the basket makers, who first appear with the spear-thrower instead of the bow, how much longer must it have taken them to develop from nomads into potters, agriculturists, weavers, and initial pueblo dwellers? Anthropologists in America are wont to look askance at anyone who assigns even a thousand years to the beginning of such cultures, but can they continue to shut their eyes to the universally observed principles of culture diffusion? Is not ten thousand years a modest estimate of the time since Cliff-Dweller culture began to differentiate from the nomad

level? These are but the personal reflections of the writer but they are not in conflict with the empirical results of the Huntington Survey and are certainly consistent with the facts of Old World chronology. The spear-thrower, for example, appears here in the same relative chronological position as in western Europe, where twenty thousand years is assigned as the probable date.

In conclusion, this volume deals entirely with one specific locality in the vicinity of Zuñi, the presentation of field data from the same, together with the methods by which a chronology for these local cultures can be projected. This we hope will be an acceptable contribution to the subject. In this introductory statement we have shown the probable relation of this chronology to that for the whole of the Southwest and suggested the possibility of extending the horizon to a correlation with the chronology as a whole.

CLARK WISSLER

April, 1919.

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ANTHROPOLOGICAL PAPERS
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ZUÑI POTSDERDS

BY

A. L. KROEBER

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ZUÑI POTSDHERDS.

By A. L. KROEBER.

PREFACE.

This paper was written at Zuñi in the summer of 1915. Its materials are limited and its interpretations avowedly tentative. It was not feasible to extend the scope of the essay without undertaking work that circumstances rendered impossible at the time. Nor did the range and nature of the materials dealt with appear to warrant a subsequent recasting in the light of the available published investigations relating to the subject. The paper is therefore presented as written at the time and on the spot, except for a brief postscript dealing with the literature and certain comparative data.

February, 1916.

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ZUÑI POTSDHERDS.

In the course of a study of family life made at the pueblo of Zuñi during the summer of 1915, I recorded the native names of a number of ancient villages in and near Zuñi Valley. A late afternoon walk a few days afterwards brought me to where Mattsakya once stood, a mile and a half east of the town of Zuñi. The wall outlines which Mindeleff still traced have mostly disappeared in thirty years, save for two rooms and where a prairie dog hole had laid bare a few feet of masonry that otherwise would have been hidden. The quantity of broken rock on the surface, the sharp rise of the knoll, and the maintained shrine, or rather two, on its summit — the last, as it proved, an almost certain evidence of former occupation of the spot — all however indicated a ruin even to the novice in archaeology. A few moments revealed a pottery fragment or two. At first the sherds were difficult to see and harder to distinguish from the numerous minute slabs of stone. A quarter of an hour, however, practised the eye; and the short time remaining before darkness sufficed to fill my pockets.

A few afternoons later, I went out in the opposite direction, toward Pinnawa, a mile or more to the west. Proceeding first to the northwestern edge of the present suburbs of the town to see the communal "scalp house," I noted another shrine or monument a few hundred feet to the north, directly in front of the government day school. This occupied the center of a slight rise, perhaps a yard above the surrounding plain and two hundred or more feet in diameter. The ground was strewn with small rounded and variously colored pebbles, such as do not occur in the fine red clay of the levels of Zuñi valley. In a few seconds sharp-edged fragments of flint or chert appeared, and then occasional bits of pottery. A passing Zuñi named the spot Shoptluwayala; its shrine is connected with the yellow Sallimoppiya dance character. The pottery was not abundant; but a pocketful was secured.

I went westward, still on the north side of the broad bed of the Zuñi River, toward a knoll nearly a mile ahead, into which the stream had cut a vertical bank. The rise in the ground made me suspect an ancient site of human occupation. Again the smooth pebbles were conspicuous; and then bits of chipped rock and potsherds were seen lying here and there. Hattsinawa was the name the Zuñi gave me next morning. As at Shoptluwayala, there was not a single building stone visible, nor anything that might have been a fragment of one; nor did the cut bank reveal any,

although pottery pieces lay on the surface to its edge. Another pocketful was the harvest.

I followed the river bed down a couple of hundred yards, and walked across the remnants of the stream — most of which was flowing through irrigation ditches into Zuñi fields — at Pinnawa. This site is the terminus of a long spur running from the southern hills to a low end at the river. Only a few steps from the stream there lay some broken rock of the type that litters Mattsakya but is wanting at Shoptluwwayala and Hattsinawa. Pottery at first was scant; but as I proceeded up the nose of the hill, the throw-out from every prairie dog hole was decorated by from one to half a dozen fragments. Toward the summit of the knoll and the inevitable shrine — only a few yards from the wagon road — both rock and potsherds lay thick, with chipped pebbles here and there. The site is also more extensive than either of the two preceding ones; and a few minutes sufficed for a larger haul.

It was immediately apparent that red, black, and patterned potsherds predominated here, as they seemed to have preponderated at Mattsakya, while white fragments had been in the majority at both Shoptluwwayala and Hattsinawa. I therefore attempted to pick up all sherds visible in certain spots, rather than range over the whole site and stoop only for the attractive ones. In this I may not have been altogether successful, for a red, a patterned, or a deep black fragment catches the eye more readily than either a "black" or a "white" one that ranges toward dull gray. But at least the endeavor was conscientious.

Next morning my finds were washed and dried — an unnecessary proceeding, I soon found — then sorted and counted. A tabulation thoroughly confirmed the mental impression of the evening before. At Mattsakya and Pinnawa, black or blackish pieces predominated; red ones were fairly numerous, white ones less so. At Shoptluwwayala and Hattsinawa, white predominated, and black and red were rare. The corrugated ware showed similarly: at Mattsakya and Pinnawa black sherds were as abundant as white, at the two other sites the black were lacking, the white frequent. The black corrugated ware usually runs to a dark or dull gray, the white is nearly always pale buff, pinkish, or light gray; but there were few doubtful pieces. There were other differences. At the "black and red" sites, a few three-colored sherds were found; at the white ones, none. The two former were extensive and heavily littered with good-sized rock fragments, as one would expect at a stone built ruin. The latter showed no rock, but a somewhat more sandy soil than prevails in most of the red clayey Zuñi plain, with some admixture of waterworn pebbles, scarcely any more than an inch in length, and of surprisingly diverse colors. The presence at

Mattsakya and Pinnawa of one or two tiny bits of obsidian, which was unrepresented at Shoptluwayala and Hattsinawa, was not altogether conclusive, on account of the small total yield of the two last named; but it seemed significant, as it does still. Finally, Mattsakya and Pinnawa had been previously mentioned to me by Zuñi informants as places inhabited in the *innote* or long ago. Shoptluwayala and Hattsinawa were named only on designation and inquiry.

There could be no doubt that here, within a half hour's radius of the largest inhabited pueblo, were prehistoric remains of two types and two periods, as distinct as oil and water. The condition of the sites indicated the black and red ware ruins as the more recent; but certain misleading observations of the pottery in use in the Zuñi homes of today left me in doubt for a time. These observations rested upon fact, but the facts are due to the influence of American civilization, and would not have obtained a couple of generations ago. Once these circumstances were comprehended, the chronological priority of the white ware type became certain.

I recalled the surveys and excavations of many years ago, and a confused impression of a mass of sherds and similar uninspiring pieces obtained for the Hemenway Expedition under the direction of the memorable Cushing, sent in an exchange from the Peabody Museum to the University of California, and now stored there in a pile of trays. But an accumulation of dust and the familiar name Halona were all that emerged with distinctness. I searched my mind for published reports of the work that must have been done in the region — vainly: if anything was in print, it had been forgotten in fifteen years during which my reading on the American Southwest had been desultory; and I was remote from bibliographies. Victor Mindeleff's study of Pueblo Architecture, for which I had sent in connection with researches into the clans and town growth of Zuñi itself, I found truly admirable, and it contained valuable plots and descriptions of ruins; but they did not touch on my problem. The final clinching was given by Hodge's most useful summary of the history of Cibola and Zuñi, included in that tremendous research which will always be fundamental to all studies of the Zuñi and which is the great labor of the life of Matilda Coxe Stevenson, who died far away while I was forming my first friendships with her old friends. In Hodge's meaty compendium I found that Mattsakya and perhaps Pinnawa were inhabited Zuñi villages in 1598, and in all likelihood when Coronado stormed Hawwikku in 1540, and that at least Mattsakya was a place of abode until the great revolt of 1680.

The fate of Mattsakya was also that of Kyakkima, a better preserved ruin nestling against the giant cliffs of Towwayallanna, four miles southeast of Ittiwawa, "the middle," as Zuñi is for the world, in the belief of its resi-

dents. The pottery of Kyakkima should accordingly be that of Mattsakya. It proved to be so. A hundred seconds on its débris settled the identity.

Not only, then, are there the type and period of white ware and the type and period of black and of red ware, but the latter is the more recent. It belongs in part to the time of early American history; the former is wholly prehistoric. I call the historic Type A, the prehistoric Type B, since further exploration or study may reveal another prehistoric Type C.

Pinnawa was revisited, and a larger collection of fragments brought home. Their relative numbers tallied as they should with the first lot, considering the chances of accident in such small series. Sherds continue some distance to the south of the wagon road that crosses the spur just south of the little summit of the site. My companion and I continued a quarter of a mile south, or southeasterly, up the gently sloping ridge to Tetnatluwayala, a shrine of one of the war god twins. The shrine led me to believe in an underlie of ruin; and it was there. There was no shadow of doubt as to period: every sherd but one was white. Even the corroborating pebbles, and absence of building sandstone, did not fail. The pottery was not abundant on the surface and again the industry of the prairie dogs proved a boon.

We went on along the ridge, down a slight dip, across the deeply washed trail that the bearded gods tread as they file from the southwest into Zuñi in the evening of the first summer solstice dance, and up again to the next low summit, where I remembered seeing a piece of lava, perhaps from a thousand year old grinding slab, on an earlier walk dictated by want of exercise and before thoughts of archaeology entered my mind. The spot is perhaps an eighth of a mile from Tetnatluwayala. As nearly as the lieutenant governor could later follow my index from a Zuñi roof, he judged it to be Te'allatashshanna; but he may have misjudged the direction of my finger, or meant a more distant place: I am not certain of the name. I could not find the lava; but a short distance to the west, and a little higher, was another shrine. The hillock was of loose white sand, wind deposited and in spots wind eroded, though mostly covered with vegetation. In one of the bare depressions, and over a small patch on the leeward slope, lay a handful of pottery fragments. Again all but one were white.

We rode to Kyakkima with the lieutenant governor. As we approached the trickle that issued from the spring at the foot of a recess in the cliffs, a whitish spot on the sandy soil caught my eye. I sensed a type B sherd; but the officer said Kyakkima lay ahead. We drank at the head of the spring; then crossed the streamlet and ascended the steep slope to the east. Here was Kyakkima, where some five hundred Zuñi once lived in a town of four levels. On the higher terraces the walls that Mindeleff plotted still

stand; half way down is the ever present shrine with the dry rotting prayer sticks from which the plumes have blown. The site is large, the pottery abundant, and much of it attractive. I filled one pocket with an average sample, in which dull black was picked up indiscriminatingly with striking black on red and black on yellow patterns. Then we hunted pretty pieces. To keep any of the collection in the open pockets of the only coat among us on the ride home, part of it had to be jettisoned. The plain black pieces were abandoned; but unless some wandering Zuñi sheep herder or traveler has in mild surprise brushed them from the large rock by the spring, they still lie on its surface, to verify my count of them, while the reader scans this page.

But the white spot was not forgotten, and before the horses were remounted a ramble over the slope west of the rivulet produced a couple of dozen sherds — two red, all the remainder whitish. As usual, building stone was not in evidence, but pebbles and boulders occurred through the sandy soil. There is no shrine; nor does there appear to be a Zuñi name for the exact spot. I have named it Kyakkima Sunnhakwi, Kyakkima West. It is not a site that suggests itself for habitation. Possibly it is only the outer fringe of a once larger settlement of period B of which the main portion is covered by the Kyakkima of period A.

It is unnecessary to continue the narrative. Other "ruins" subsequently visited conform to the two types; such data concerning them as were noted, are included in the tabulations and in the memoranda appended. It is observable that of the type B sites, Hattsinawa and one other show a fair proportion of red ware. They therefore belong to the end of age B, or possibly to the first dawnings of that later period which was still blooming in the sixteenth and seventeenth centuries of our era.

The white slip pottery of the prehistoric time in Zuñi Valley is clearly, in general, of the familiar Cliff-Dweller type. Even the black and white checker board ornamentation so familiar from museum and private collections, is represented. A deviation from the colorless grayish white of most Cliff-Dweller specimens to a light buff or yellowish or pinkish white in many of the Zuñi pieces, may be the result of a peculiarity of the local clay.

Careful explorers in Arizona have warned against too much weight being given to color when inferences are drawn. Yellow ware in a ruin may be more indicative of the chemical constitution of the soil than of a type of civilization. I am ready to subscribe to this caution as heartily as anyone. It does not apply to this study of Zuñi antiquity because every ruin touched lies within the same valley, because all those examined are within an hour's distance of the pueblo, and because at least two pairs of ruins of differing periods are only a quarter of a mile or less apart.

Zuñi pottery of 1915, which may be found in every household, is overwhelmingly a white or creamy yellowish white slip ware, patterned either with black or with black and red; but in the latter case, the areas of black exceed those of red. The reason for this prevalence of white surface is that the pottery in use is confined principally to two types: water jars, usually large but low; and great open bowls for bread kneading. Now and then may be seen a canteen of breast shape, also with black or black and red ornamentation; a high jar, of plain polished red, used both for storage and as a drum; and a water jar, usually small, with red inside and bottom — the red being burned yellow ocher. There are some black cooking pots: I have seen a number with handles or knobs, none really corrugated. Most of them stand unused in interior storerooms; occasionally one is set on the hearth fire to parch or pop corn, more rarely to cook in. The Zuñi woman now cooks in a frying pan or in agate ware, and serves food either in this vessel or in a china dish or rectangular lava bowl. A hundred, perhaps twenty-five years ago, this was not the case; and I am confident that débris from the town streets of that time would have shown nearly the same proportion of blackish ware as occurs at Mattsakya and Kyakkima, simply because the native cook pots had not yet gone out of use before American made substitutes. A few holes dug a yard or two deep in the streets or fallen houses of Zuñi will confirm or disprove my prediction.

I now began to observe sherds around the town. In the course of an afternoon's survey on the housetops, I gathered as many pieces as I could carry without interfering with the work in hand. More than half were blackish, and at that I probably desisted sooner from trying to pry out of the hard baked clay obstinately imbedded pieces of this shade than gaily colored ones.

It seemed however that the prevalence of black on the roofs might be due to the blowing over of chimneys, which in former times were regularly, and now still often, made of cracked or broken cook pots. Stooping through the streets of the town was hardly calculated to enhance my standing in Zuñi, so I delegated the task to four children of my "family," who fell to the work with zeal, and I am confident observed as closely as they could my instructions to collect without discrimination. An afternoon netted them over a thousand fragments, large and small. A third of these I class as black; more than half were black or black and red on white, and at least some of the white sherds are from jars of this type. My youthful aids reported that in the vicinity of the great plaza, in the very heart of the town, black pieces were scarce, but that toward the northwestern edge of the pueblo proper, — not of the suburbs or outlying houses — they became numerous. Both red and black on red pieces were found, though they aggregate only two or three percent of the total.

I believe this collection reasonably trustworthy. While dark sherds may have been a little slighted, they are far more numerous than I should have predicted after a month of frequenting Zuñi homes. When the changes in habits are considered that recent years have worked, it is a fair inference that a similar gathering made in a stratum a few feet below the present level of the streets would contain about one half black pieces, and correspondingly fewer of the patterned water jar type. In short, Zuñi potsherds of 1915 actually approximate those of type A, while those of 1815 may be expected to differ hardly at all, in color proportions, from those of 1615 or perhaps 1515. I suspect that a gradual diminution of the red ground ware, and perhaps of corrugated, is the chief change that has taken place (in the features considered) in the centuries since the discovery.

A few minor alterations may however be noted. The round lines of the deer and birds and scrolls on some modern Zuñi jars, are almost utterly lacking from the early historic sherds. This fact substantiates the conviction gained from museum inspection of modern Pueblo ware, that these designs are not native but the result of European influence, though to the Zuñi woman of today they seem as truly Shiwwi or pure Zuñi as do the angles she paints around them, or with which she covers the whole of the next jar she makes. Patterns in type A pottery are not infrequently lustrous — perhaps not a true glaze, but with a distinct glassy shine. The art or custom of producing this has perhaps died out since the sixteenth century. Red ware with black patterns seems to be no longer made: at least I have seen none in Zuñi except in a few specimens pronounced old. Red ware with overpainted white lines is still occasionally manufactured, though I believe mostly in bric-a-brac and tourist articles; but this was infrequent also in period A. Most of the vessels in use today have their black pattern, if not a true black, at least a very dark brown. This is due to the mixing of the pigment with water containing either cedar, or ky'ahhewe, or another plant extract. The small, four-sided, step-edged bowls still used for sacred cornmeal — whose average age may be a generation more than that of household bowls and jars — mostly have their frog and tadpole patterns in walnut brown, the above dyes not having been used with the pigment. Much of the type A "black" decoration is of the same shade; especially on yellow or yellowish background. The prayer bowls also incline to a yellowish slip; so that they connect the twentieth with the sixteenth century in two ways. A distinct green, usually lustrous and sometimes bright, which is occasional on type A pieces, seems however to have no equivalent today.

The ware of type B, of type A, and of today, shows white or gray along the fractured edge. It is rarely reddish, or red like Southern California

pottery. This is presumably a characteristic of the local clays. There are some ancient and modern fragments, mostly thick and coarse, burned red through; but the majority of red pieces are covered with a highly polished slip of that color.

History tells us that the people of period A were Zuñi, speaking and essentially living as now. The men and women who inhabited the sites of period B belonged to the unidentified prehistoric past. We cannot say that they were or were not Zuñi; but there is no known fact which prevents them from having been of this nation. That their ruins are low and soil-covered can be explained by reason of their age: that they are small in extent, in the open country, and located with reference to water supply or farm land or unknown considerations rather than for defensive protection, indicates a somewhat different life in the prehistoric period. I have not turned a spadeful of earth in the Zuñi country. But the outlines of a thousand years' civilizational changes which the surface reveals are so clear, that there is no question of the wealth of knowledge that the ground holds for the critical but not over-timid excavator.

The results obtained are assembled in the statistics that follow. Table 1 gives the number of sherds, of each of the ten colors or types established for classification, at each ruin of period A; table 2, the same for period B. Lots obtained on separate visits to the same site are listed separately. It must be remembered that in all cases covered by these two tables, representative collecting was aimed at. For this reason the average sample from Kyak-kima in table 1 must be carefully distinguished from the selected collection made on the same site but analyzed in table 7.

Table 3 converts the absolute numbers of table 1 and 2 into percentages. It speaks for itself.

Table 4 is a summarization of 3, on the basis of the three fundamental colors, black, white, and red. Of sherds colored differently on their two sides, or having a pattern in two or three colors, all containing any red have been counted as "red"; of the remainder, all are included under "white" which bear any white. This arrangement gives red somewhat the advantage and black the disadvantage among the three colors; but any other method of summarizing would have been subject to an equal degree of arbitrariness. At any rate, table 4 reveals clearly, even to those who may not care to absorb the more numerous figures of the preceding lists, the distinctness of the two periods. In the historic time, "A," black preponderates, and red about equals white ware. In the prehistoric period, "B," white is overwhelmingly in excess and both black and red occur only scatteringly.

As my study progressed, I frequently found it difficult to divide the corrugated pottery into "black" and "white," and the difference between

periods A and B as regards this ware became apparent as one of total frequency rather than of difference of tint, though it is true that period B corrugated samples are almost throughout distinctly whitish. I also recalled that real corrugated ware is said by the Zuñi not to be made today, and is very scarce among the street débris, while most of the period A ruins show an appreciable percentage, though small compared with the type B sites. Further, the only really large proportion of corrugated pieces from any period A locality was at site W, which in its lack of building stone and general appearance resembles a type B site; next to it comes Pinnawa, which is more decayed as a ruin than even Mattsakya, and far more than all the others. It therefore seemed as if a progressive decrease of the proportion of corrugated ware of any color were a characteristic of the lapse of time in Zuñi Valley irrespective of "period"; and I arranged the sites in order accordingly. Two of the minor sites of period B did not fit into the series; but both of these also showed other special characteristics, in their slip ware. On the other hand, Hattsinawa, which I had before classed as late B on account of its high proportion of red sherds, as well as because it is located on a more distinct knoll than any of the other B sites, comes nearer to the A ruins, in its frequency of corrugated ware, than any B sites except Kyakkima West, and from this latter the sample was of the smallest.

A subdivision of the two periods was thus indicated. I tested the obtained sequence of sites with several color characteristics. The results, which are given in detail in table 5, are surprisingly corroborative and allow of a tentative discrimination of five sub-periods, or six if modern Zuñi be included. Briefly, corrugated ware preponderated in the very earliest epoch, and diminished through all periods until it has died out in the present. On the other hand, three-colored pottery,—black and red patterns on a white or yellow ground—is wanting in B, appears sporadically in early A, becomes more numerous in late A, and reaches its climax today. Black on red ware, on the other hand, is most abundant about the middle time. It has not been found in early B, while late A and the present reveal a decline from middle and late B and early A. For red and for black pottery in general, the relative figures for period A are not worth anything; but in both classes the period B sites show an increasing approximation to period A proportions in the order of their age as suggested by the corrugated ware. I believe it may be concluded, while type B and type A sites can normally be distinguished without the least uncertainty, and the separateness of the two is fundamental, that nevertheless they do not represent two different migrations, nationalities, or waves of culture, but rather a steady and continuous development on the soil.

TABLE 1.
POTTERY FRAGMENTS FROM SITES OF PERIOD A.

	Matsukya		Pinnauca		Kyak- kima Sample	Kolliuca	Site W	Toowa- yallanna	Winma- yauca	Shunn- tekkiya	Total	Modern Zuni	
	Visit 1	Visit 2	Visit 1	Visit 2								Roofs	Streets
Black, dark gray, dull, without slip	53	319	54	101	60	71	45	250 ¹	111	110	1174	37	348
Red on one side or two ^a	8	12	25	21	12	19	2	160	30	7	296	4	26
White or whitish on one side or two ^a	6	77	2	28	7	18	6	96	11	33	284	5	94
Corrugated black or dark	—	5	4	22	1	—	10	—	—	4	46	—	—
Corrugated white or light	2	10	1	8	3	—	8	4	3	1	40	—	3
Black ^b pattern on white ^c	14	58	15	18	10	18	4	46	29	50	262	12	487
Black ^b pattern on red	5	11	6	21	2	3	1	16	1	5	71	1	5
Red pattern on white ^c	—	2	6	3	1	—	—	8	4	6	30	—	—
White pattern on red	—	—	—	5	1	—	—	—	—	1 ^g	7	3 ^b	—
Three colors — black ^b and red on white ^c	1	20	2	1	3	9	—	47	8	17	108	7	138
Total	89	514	115	228	100 ^d	138	76	627	197	234	2318	69	1101
Obsidian	2	14	1?	—	e	—	1	1	—	—			

^a Red on one side and white on the other has been counted red.

^b "Black" patterns include brown and green. A noticeable proportion of "black" patterns of type A are glossy; none of type B.

^c "White" ground includes cream color and yellow; and in a few cases deep saffron, salmon, and brownish.

^d These hundred sherds are separate from those from Kyakkima classified in table 7.

^e Occurs, but not in type sample.

^f Neglected for colored pieces. A representative collection would show at least half of the unslipped "black" variety.

^g Or red on white.

^h Probably all fragments of one vessel.

TABLE 2.
POTTERY FRAGMENTS FROM SITES OF PERIOD B.

	Shoptuvavayala Visit 1	Shoptuvavayala Visit 2	Hattsi- nawa	Telmathu- wucayala	T'e'illatash- shhanna	Kyakkima West	He'i'ti'anna- anna	Site Y	Site X	"Hawu- ikkwa B"	Total
Black, dark gray, dull; without slip	2 ^a	9 ^a	8	—	1 ^b	—	2	—	1	—	23
Red on one side or two	—	2	2	1	—	1	—	—	4	3	13
White or whitish on one side or two	20	106	12	5	5	12 ^c	71	1	19	4	255
Corrugated black or dark	1 ^a	8 ^a	—	—	—	—	—	—	—	4	13
Corrugated white or light	15	99	11	35	14	3	—	—	108	19	304
Black pattern on white	2	35	6	8	1	8	4	17	20	14	115
Black pattern on red	1	5	2	—	—	1	—	—	—	4	13
Red pattern on white	—	—	—	—	—	—	—	—	—	—	—
White pattern on red	—	—	—	—	—	—	—	—	—	—	—
Three colors — black and red on white	—	—	—	—	—	—	—	—	—	—	—
Total	41	264	41	49	21	25	77	18	152	48	736
Obsidian	—	—	—	—	—	—	—	—	—	—	—

^a Several are sufficiently light in color to be doubtful.

^b Polished brown.

^c Includes one piece of yellow, a color which, while largely represented among the "whites" of type A, is nearly lacking from the period B sites.

TABLE 3.
PERCENTAGES OF POTSDHERD VARIETIES FROM SITES OF PERIODS A AND B.

	Period A								Period B										All sites combined		
	Mattakya	Pinnawa	Kyakima	Kollua	Site W	Touvagallanna	Wimayawa	Shuntekkyu	All sites combined	Zuri roofs	Zuri streets	Shoplunuvayala	Haltinawa	Tellanalluvayala	Tellatashshymna	Kyakima West	He't'W'annanna	Site Y		Site X	"Hawekku B"
Black ^a	62	45	60	51	59	(40)	56	47	51	54	32	4	19	—	5	—	3	—	1	—	3
Red	3	13	12	14	3	25	15	3	13	6	2	1	5	2	—	4	—	—	3	6	2
White	13	9	7	13	8	15	5	14	12	7	9	41	29	10	24	48	92	6	12	9	35
Corrugated black	1	7	1	—	13	—	—	2	2	—	—	3	—	—	—	—	—	—	9	2	2
Corrugated white	2	3	3	—	11	1	2	0 ^b	2	—	0 ^b	—	37	27	66	12	—	—	71	40	41
Black on white	12	10	10	13	5	7	15	22	11	17	44	12	15	16	5	32	5	94	13	30	16
Black on red	3	8	2	2	1	3	1	2	3	2	0 ^b	2	5	—	—	4	—	—	—	6	1
Red on white	0 ^b	3	1	—	—	1	2	3	1	—	—	—	—	—	—	—	—	—	—	—	—
White on red	—	1	1	—	—	—	—	0 ^b	0 ^b	4	—	—	—	—	—	—	—	—	—	—	—
Three colors	4	1	3	7	—	8	4	7	5	10	13	—	—	—	—	—	—	—	—	—	—
	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

^a Designation of colors is as in Table 1.

^b Present, but amounting to less than one half of one percent of the total number of sherds collected at the site.

TABLE 5.

PERCENTAGES.

<i>Period</i>	<i>Site</i>	<i>Corrugated</i>	<i>Three Colors</i>	<i>Black on Red</i>	<i>Any Red</i>	<i>"Black" ware</i>
PRESENT	Zuñi	0 ^a	0	1		
LATE A	{ Towwayallanna	1	8	3	22 ^b	53 ^b
	{ Kolliwa	—	7	2		
	{ Shunntekkya	2	7	2		
	{ Wimmayawa	2	4	1		
	{ Mattsakya	3	4	3		
	{ Kyakkima	4	3	2		3
EARLY A	{ Pinnawa	10	1	8	10	19
	{ Site W	24	—	1		
LATE B	{ Hattsinawa	27	—	5	10	19
	{ Kyakkima West	12 ^c	—	4	8	— ^c
MIDDLE B	{ Shoptlawwayala	40	—	2	3	7
	{ "Hawwikku B"	49	—	6	12	9
EARLY B	{ Te'allatashshanna	66	—	—	—	5
	{ Site X	71	—	—	3	1
	{ Tetlnatluwayala	72	—	—	2	—
? — B	{ He'i'tli'annanna	—	—	—	—	3
	{ Site Y	—	—	—	—	—

^a Present, but less than half of one percent.

^b The variation between sites here lumped seems due more to accident or selection in collecting than to differences typical of period.

^c Unfortunately only 25 pieces are available from this site.

I am aware of the thinness of my foundation in rearing a structure of half a dozen eras on nothing more than three or four color and texture features of a few thousand sherds gathered on the surface of some fifteen closely grouped spots. I was tempted to buttress my chronological classification by further collecting, especially at sites from which my representation was little more than vanishing. But my stay in Zuñi is short; the time that gathering, sorting, and tabulating would require, is scarcely available; and even twice or three times the number of surface fragments would not suffice to convert my tentative conclusions into positive ones. The final proof is in the spade; and that involves money, a gang of men, months of time, and an examination, if possible, of all ruins within a given radius. The real confirmation of my chronology I must thus of necessity leave to the future. But I am confident that however the present classification be altered in detail or supplemented by wider considerations, in essentials it will stand — because the essentials are obvious on the ground.

The problems of prehistoric Zuñi and of the earliest Southwest will be solved only by determined limitation of attention. There has been treasure hunting in this fascinating region for fifty years, some with the accompaniment of most painstaking recording, measuring, and photographing; but these dozens or hundreds of efforts, some of them costly, have produced scarcely a rudiment of true history. It is fatal for the investigator to exhume pottery in the morning, note architectural construction at noon, plot rooms in the afternoon, and by evening become excited over a find of turquoise or amulets. Such procedure may allow areas and even sites of most distinctively different type to be discriminated, but the finer transitions, on which ultimately everything depends, will be lost sight of under the wealth of considerations. One feature at a time, then another, then correlation, is the method that will convert Southwestern archaeology from a delight for antiquarians into a historian's task. The fine bowls, precious jewelry, and beautiful axes that already cumber our museums, will find their use; but that time is at the end of study, when they can be placed and used with meaning, not at the beginning, when they confuse and weary. At present five thousand sherds can tell us more than a hundred whole vessels, and the bare knowledge of the average size of room in a dozen contiguous ruins may be more indicative than the most laborious survey of two or three extensive sites.

Particularly does the necessity of concentration apply geographically. A promising site here and another a hundred miles away may show striking differences in innumerable respects. But in the present chaos of knowledge who can say which of these differences are due to age and which to locality and environment? With the chronology of Zuñi, of the Hopi country, of the Rio Grande, of the San Juan, and of the Gila worked out independently, comparison may yield momentous conclusions; but comparison at present, however suggestive, will bear no certain fruit. If the investigator who enters this greatest of American archaeological fields allows himself to be appalled by the length and variety of the labors of those who have preceded him, his outlook will be dreary; if he recalls that but for a few scattered scratches the field is virgin as regards real history, and if he wisely limits himself, and proceeds by the common sense plan of one thing at a time and that hammered at until it yields, he surely has before him one of the most promisingly productive of scientific problems.

NOTES ON INDIVIDUAL SITES.

PINNAWA.

There is plenty of loose rock on the summit of this mound, but not a trace of the walls plotted by Mindeleff is now visible. Even the rebuilt corrals and the house still in use in 1885 are gone. Pottery extends at least fifty yards south of the wagon road, and north almost to the river. The latter may be washed; the former is on higher ground than the road and plotted southern part of the village. The knoll is gentle, and the site of the open character of Mattsakya and Zuñi rather than naturally defensible like Kyakkima, Kolliwa, or Wimmayawa.

MATTSAKYA.

This ruin has decayed nearly as much as Pinnawa in thirty years. There are no standing walls whatever, and vegetation is comparatively thick. The two rooms west of the shrine are fully traceable; but that is all. (See table 6.)

KYAKKIMA.

Kyakkima has altered little since Mindeleff's survey. It must be noted that his map is oriented with east to the top of the page. The town was built on four distinct terraces or levels, which I estimated at thirty, fifteen, and fifty feet above one another. The two former figures agree with Mindeleff's contours, but his lines stop before reaching the highest terrace, which lies dead against the face of the cliff on whose top stand the ruins of Towwayallanna. With its back against this tremendous wall of rock, is a low foundation, enclosing a space much larger than an ancient Pueblo room, which shows in Mindeleff's plan as a rounded, irregular quadrangle. To my eye it seemed more nearly semicircular. The lieutenant governor, when his attention was called to it, pronounced it a "head man's dance house." The upright and horizontal slabs at the east end of the ruin are still in place; but I counted seven of the former where the plot shows five. My informant volunteered the observation that here prayers were spoken to the rising sun — somewhat as by the Zuñi pekkwine today. Mindeleff's Indians suggested defense, and he himself conjectured graves. I will not presume

TABLE 6.

MATTSAKYA.

Second Visit.

Black, dull, and gray, all without slip, mostly smoothened black inside	307	
Gray, crackled, polished, texture different from white and yellowish slip	12	319
Red, polished, some on both sides, some with white slip on one side	12	12
White slip on one side	30	
Yellowish slip — about half the pieces on both sides, the other half usually have a polished gray, perhaps slip gray, on the outside	47	77
Corrugated black	5	5
Corrugated white — some with thin white slip, others with thick gray smooth slip (?) on inner side	10	10
Black on white; only two show hatching. Pattern mostly on inside and generally true black, but there are a few brown pieces	23	
Brown on yellow		
Pattern inside, outside white, yellow, or gray	17	
Pattern inside, outside red	2	
Pattern on both sides	5	24
Brown on grayish, from very light to dark	11	58
Black on red; only one hatched; undecorated side either white or red	11	11
Red on white	0	0
Red on yellow	2	2
White on red	0	0
Three color: black and red on white: but black is often brown; red, brownish; white, yellowish	14	
Three color: deep yellow ground with red pattern edged in brown	6	20
Total pottery		514
Lava pieces, large and small	12	
Obsidian, mostly small pieces	14	
Arrow point, milky, translucent	1	

to decide the conflict. Two of the three lower levels are depressed in the center, suggesting ruined house walls surrounding plazas. This was also the lieutenant governor's explanation. We may have been misled, however, by the fact that the interior cross walls which Mindeleff diagrams are not visible today. Still, one would expect that a solid cluster of rooms would fall into a heap higher rather than lower in the middle. (See table 7.)

KOLLIWA.

This ruin, named to me by several informants before it was visited, is three miles distant from Zuñi, about 15 degrees east of north or along the magnetic needle. It lies at the edge and near the eastern end of a red sandstone ridge that stretches for several miles north of Zuñi in a general east and west direction, or more nearly northeast and southwest. Some three or four hundred feet below the cliff and talus that form the top of this ridge, a nearly level bench, a short hundred yards in width, extends for some distance, more or less intermittently. At several places small but deep canyons head suddenly from the bench with a sheer drop. On two small knolls on both sides of one of these drops is Kolliwa, the western settlement measuring about 50 by 75 feet, the eastern 60 by 120. The knolls rise but slightly above the bench, and each ruin has a long straight wall along its back, facing the bench and guarding it from attack on this its weakest northwesterly side. These walls run parallel with the cliff. On their other sides, the outer walls closely follow the steep rim of the knolls. The choice of the sites from defensive motive is obvious. It is true that the cliff seems to loom above both; but its height as well as its distance would cause an arrow to be aimless or spent before it fell in either part of the town, and would render any other missile totally futile.

A hundred and fifty yards down the canyon from where it heads between the twin townlets, is a cottonwood, the only one in miles. A few steps below, is a spring, a diminutive pool with a few stones built around it by sheep herders. When seen, it was dark red from the mud of recent rains, and scarcely drinkable even to the thirsty. But the canyon bed seemed wet, and no doubt a hole in a well chosen spot would have filled with clear seepage. At any rate, the cottonwood attests permanent water.

It is difficult to decide where the inhabitants of this wild fastness grew their food. Their canyon is a rocky little gorge; and while it soon takes a calmer course, it is a mile before, uniting with other washes, it spreads into a nearly level flood plain, and an unfavorable clay one at that; while the nearest part of Zuñi Valley is a mile and a half distant. Just below the

TABLE 7.

ANALYSIS OF PAINTED POTSDHERDS FROM KYAKKIMA.

Black on white:

Black or dark brown on white; outside red	4	
" " " " " " " white	2	
Shiny green on white; outside red	2	8
Black or dark brown on white; inside white or gray	7	
Green on white; inside white	1	
Black on white; inside black on white	1	
Black on white; inside red	1	10
Dark brown on pale yellow; outside yellow	1	
" " " " " " " brown	1	2
" " " " " " inside pale yellow	2	
" " " " " " " brown	1	
" " " " " " " reddish	1	
" " " " " " " gray	1	
" " " " " " " same colors	2	
" " " " " " " yellow, inside same colors	1	8

Black, glossy green, or dark brown on gray, light brown, or greenish gray

Pattern inside	5	
Pattern outside	3	5

Black on Red:

Black on red; outside red	5	
Black on salmon; outside salmon	3	
Glossy dark green on red; outside red	2	10

Red on Reddish:

Style of Yuman ware; pattern outside; inside same color	2	2
---	---	---

White on Red:

White on red; inside glossy black on red	3	
" " " " " maroon on white	1	
" " " " " green on white	1	
" " " " " white	1	6

Three Colored:

Black and red on white; inside red	1	
" " " " " buff; " "	2	
" " " " " white; " black	1	
Black and red or maroon on gray or buff or yellow; inside same ground color	5	
Dark brown and red on white; inside white	1	
" " " " " yellow; inside brown on white	1	11
Glossy black, green, or brown and red or reddish brown on white; outside red, reddish, or white	3	
Black and white on red; outside red on white	1	4
Four shades from pale yellow to dark red; outside polished gray	1	1

70

Sixteen of the above show hatching in the pattern

built on knolls, however, and for some distance along the ridge in both directions, at the same relative height, the spurs between the numerous little canyons are sand topped; and while now overgrown with cedar and piñon, and somewhat rolling, they might have afforded small level patches on which with careful nursing corn could be grown.

The population of Kolliwa was never large. The two towns together

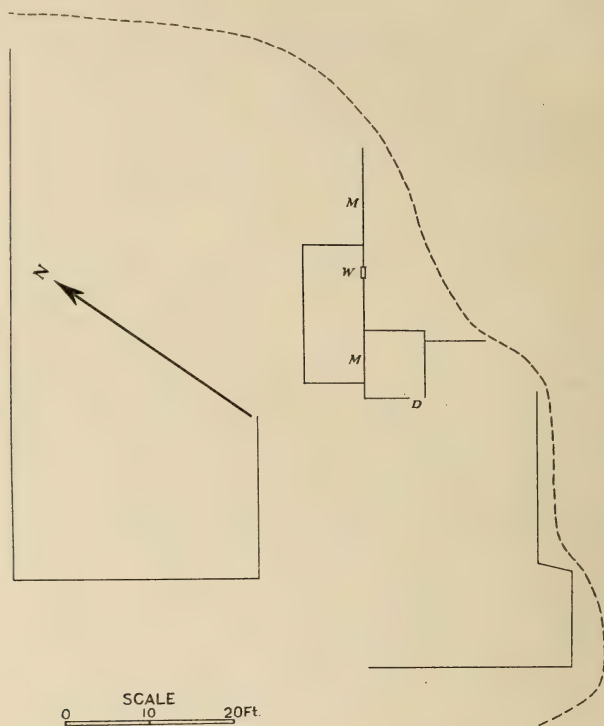


Fig. 1

WEST KOLLIWA

- D* DOOR OR ENTRANCE
W WINDOW TWELVE INCHES HIGH FIFTEEN INCHES LONG
M MUD STILL IN CRACKS OF WALLS
 — WALLS TRACEABLE, FROM SIX FEET HIGH TO LEVEL WITH GROUND
 --- BRINK OF KNOLL

may have harbored a hundred and fifty people. But living rooms are distinctly traceable only on the peaks of the two knolls, and the outer defensive walls may each have enclosed only a few dwellings.

The masonry varies in quality, and in thickness from nearly one to at least two feet. A window, three or four feet from the ground, and clay

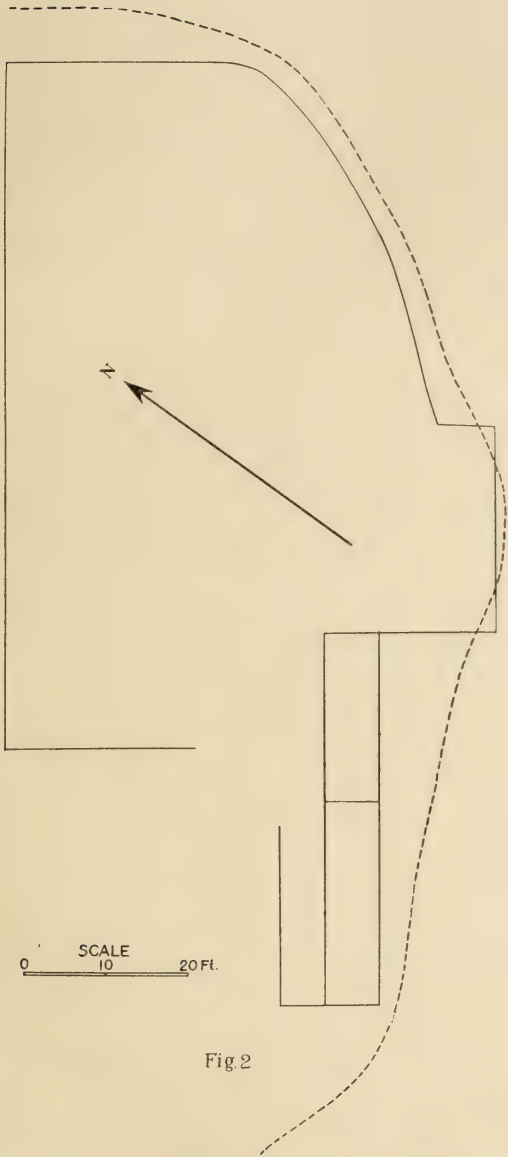


Fig 2

EAST KOLLIWA

-- WALLS TRACEABLE, SOME STANDING UP TO FIVE FEET HIGH
--- BRINK OF KNOLL

mortar with imbedded pebbles, in the chinks of the best preserved masonry, may be seen in West Koliwa. Too great a recency need not be argued from these features; but a notable antiquity is also out of the question.

This inference is confirmed by the pottery, which is most clearly of period A. The only distinctive circumstance is the total absence, among more than a hundred sherds, of corrugated ware; and this may be accidental.

Sketches of the twin sites are appended. I had not been led to expect a real ruin, so a knife point, slab of stone, broken match, and walking stick took the place of pencil, paper, scale, and tape. Close accuracy was thus out of the question, but the two diagrams are approximately true.

SITE W.

A third of a mile northeast of the government day school, and a hundred and fifty yards from Governor Lewis's house, the children found sherds and brought them in. The site has been irrigated of recent years, and besides two or three gentle rises of a couple of feet, there is nothing to cause the faintest suspicion of former occupation, except a small proportion of pebbles in a few spots. The pottery is of type A in standard proportions, except that corrugated ware is unusually abundant; even obsidian is present — I picked up the flake myself. It is however the only type A site which is totally ruinless and rockless and on the level ground.

TOWWAYALLANNA.

Towwayallanna is the impressive mountain that all who write of Zuñi have been impelled to mention. Formed by age long erosion between the Zuñi River and a large and long wash on the southwest, it dominates the imagination as it does the landscape. Flat-topped, sheer-walled, a mile in each direction, and a thousand feet high, it has three times sheltered the frightened Zuñi in the historic period — including twelve continuous years after the great rebellion of 1680, — and no doubt served them as refuge on more than one occasion before. In their own creation myth, they found safety on its summit from the flood as well as from their foes; and their shrines to Ahhayuta his elder brother and Ahhayuta his younger brother — the war god boy twins — are still maintained on the top in undiminished sanctity, as innumerable bits of turquoise, shell, and every kind of valuable thing attest. There are two trails which are difficult if not dangerous; a third can be comfortably descended to the rolling sand hills of the peach

orchards in ten minutes, and climbed if necessary on burro back; but it has been improved for the purpose. In old days it would have constituted nearly as formidable a barrier to storm as the other two.

Locally, Americans know the mountain by its Zuñi name. In books it is written Thunder Mountain, for which Cushing is probably responsible, and which is as striking and as worthy a designation for the majestic rock as could be desired, and in the best vein of that man of genius. Unfortunately, I must incline to Mrs. Stevenson's cooler interpretation of Corn Mountain, not only on Zuñi authority, but on my own imperfect knowledge of the speech. Thunder is towowo, and corn towwa, in the orthography which I follow. I have more frequently heard Toayallanna — also, it is true, toa more often than towwa; but I suspect the ww to be slurred after o in both words.

I add for the advantage of those who may have the good fortune to follow me in a stay, however transient, at "the middle place," that it is impossible to carry away a truly full remembrance of the country of the Zuñi, — of their earth — until he has looked down the valley from the rim of this looming mesa. If, in addition, one be privileged to see distant rain-storms travel among the still sunshine, he will know the world the Zuñi heart dreams of as well as the one its body walks.

The ruins, which do not appear to bear any other name than that of the mountain, have been surveyed and described by Mindeleff. They do not seem to have altered to any sensible extent. The southeastern portion is practically on top of Kyakkima, six or seven hundred feet below. My visit occurred after a week of rains; and two natural basins of water were seen which with a little damming might have been extended to the size of those mentioned by Mindeleff. The ruin is the largest in the vicinity. It gives the casual impression of having sheltered a thousand people; but is so scattered that it cannot be surveyed in one sweep of the eye, and may have harbored twice as many. The available building stone did not break into even slabs; hence the walls are shambling and tumbledown, and afford no ground for estimating the age of other ruins by comparison with the condition of this two hundred and twenty-two year abandoned masonry. Part of the mountain top is arable sand; but the area available is too small, if ever it was utilized, to have supported more than a minute fraction of the population.

The potsherds of course are of type A. They are frequent at some distance from the structures. A pair of willing hands guided by a sufficiently patient brain, might gather a thousand pounds without a tool. All five members of our party collected at different spots; so that I suspect a somewhat undue proportion of colored pieces, and that perhaps half of the monotonous black and dull unpolished fragments within reach were left.

Red ware is relatively abundant; but if sherds red on one side and white on the other had been counted as of the latter color, the proportions would have been exactly reversed. Nineteen of the one hundred and sixty pieces reckoned as red are yellow overpainted with a streaky dark maroon; twenty-four are black or gray on the opposite side, sixty-five white; and only fifty-two red on both sides. Even these were possibly sometimes given a white slip before the red-burning wash of yellow ocher was applied.

White sherds include some with the pure lustreless crumbly slip of Cliff-Dweller vessels; others ranging from white through cream to yellowish, polished like modern ware, and in some cases probably fragments of patterned jars; while a fair proportion seem to be without true slip, and of a gray which but for its light shade would have been reckoned as dull or "black."

Decorated ware, with few exceptions, might be modern. Black on white fragments are about as numerous as black and red on white; but many may be from three-colored vessels. The same is probably true of some of the red on white sherds, but others appear to have been painted in these two colors. Some glossiness appears in a few dark green or brown patterns; but the luster is thin.

WIMMAYAWA.

This ruin is visible from the Gallup road, an eighth of a mile west of which it follows the outline of a small hill. The distance from Zuñi was said to be five miles. I estimate it at three and one half. There is a living spring near by, still known by the name of the ancient town; and a long wash, which the road follows for a distance, must carry water below ground, since it supports a cottonwood in fair condition. The levels along this stream bed would suffice for some patches of corn; but the farms of the settlement must in the main have been in Zuñi Valley a couple of miles away. The ruin is perhaps a mile to a mile and a half distant from site X, about in line with it and the Black Rock school.

Wimmayawa could have housed two or three hundred people. Its east and west, and north and south walls conform to the lines of the hill on which it is situated, though less closely than at cramped little Kolliva. Defensibility and water led to the selection of the spot for habitation.

Most of the walls that are first visible, are recent corrals, probably following old foundations almost throughout, but with the inner walls removed to build up the enclosure. One of the corrals is in splendid condition, and its entire interior is level with sheep dung. In one place the loose, unmortared corral rests visibly on an old wall. The difference is striking, but

indicative of diversity of use rather than of deterioration of art. We too build our dwellings better than our barns. Outside of three obvious fences, the masonry is probably all ancient, and where tolerably preserved, of much the same type as in the just mentioned piece of foundation. A room eight by seventeen feet, and another ten square, are in fair condition. These seem normal interior sizes at period A sites. Mud mortar was observed in place. Building stone is at hand. It does not slab as evenly as at Kolliwa, but at least as well as at Kyakkima and far better than that of Towwayallanna; and the quality of the masonry is in direct accord with the nature of the stone. It would therefore be rash, in this region, to argue age from condition of walls, or to assert a uniform decline of the building art with the progress of time.

So far as I know, Wimmayawa has never been plotted, and I was therefore inclined to attempt a sketch survey. An encounter with a rattlesnake, presumably attracted by the innumerable lizards and small rabbits that haunt the broken walls, however led me to conclude that such a rough diagram as I could make alone with the aid of a stick, would not be worth the risk of stepping with unlegged feet over another one of the species; and I abandoned the endeavor.

Pottery was only fairly abundant; and as at other ruins, I found more in the open spaces just outside of the town than in the débris of the rooms. The kinds and proportions of ware are thoroughly representative of type A. About a third of the red pieces were white on one side. Of the eleven "white" four were yellowish, and five showed the porous bluish surface so prevalent at He'i'tli'annanna. All the red on white sherds, and some of the black on white, seem to have come from vessels that originally bore both black and red patterns on a white surface.

SHOFTLUWWAYALA OR SHOFTLUWWALAWA.

This little knoll measures 65 yards from north to south, where it is well defined, and about 120 from east to west, in both of which directions it fades out into the surrounding level ground. The shrine of the Yellow Sallimoppiya is nearly in the exact center. The spot has unquestionably been inhabited. The complete absence of building stone forces the possibility that the builders of period B may have used adobe clay. But it would be fantastic to rear any imaginings on this speculation until thorough excavations have been performed. It is more likely that all the surface rock has been carried away to be built into nearby Zuñi.

HE'I'TLI'ANNANNA.

This site, whose name seems to mean "blue wall," is on the road to Kolliwa, about two miles from Zuñi. A small knoll, five or six feet high, was seen a few yards to the left of the path, and perhaps two hundred yards east of the easterly end of Alla'immutlanna, a steep ridge paralleling for a mile or so the higher and longer one at whose base Kolliwa is nestled. As I approached, a few slabs from an abandoned shrine became visible on the summit; then the indicative pebbles appeared in the soil, and a moment later the first potsherd — a white one — was found. There were needed only the observations that no building stones lay about and that the site was a small one — perhaps fifteen yards across — to make a habitation of period B morally certain. The pottery, though not abundant, was numerous enough for ample confirmation. There were no red pieces, and only two small black ones, one of them a bit in such condition that its classification must be doubtful. All the other seventy-five sherds were white, four painted with black patterns, the rest plain. Of these, somewhat more than half presented a porous whitish slip of weathered appearance, while some twenty-five or thirty were of a distinct bluish gray, pale enough to be reckoned as white. There was not a single corrugated piece. The uniformity as well as distinctiveness of the ware at this little site is remarkable.

It may be noted that a hundred yards to the north, near one of the lowest cedars on the gentle slope that fronts toward Zuñi, lay a large brown-painted creamy-yellow potsherd — typical modern ware. Its appearance and feel were distinctly new. It may have rested where found a few days or several years. Some hundreds of yards further, right in the path, a smaller piece of typical black ware was found — with equal lack of apparent reason for its isolated presence. These examples, together with the occurrence of a piece of bottle glass and of American made china on the surface of Shoptluwwalawa among the numerous sherds of the prehistoric period, emphasize the slight weight that can be attached — in surface observations — to unique specimens, and the necessity of basing inferences on series of some magnitude.

He'i'tli'annanna is not far from the northern and now cultivated edge of Zuñi Valley. The slight slope on which it stands may also be cultivable, though this seems doubtful even for the acclimated native corn. Water may once have been obtainable in some crevice at the base of the nearby ridge.

SITE Y.

More puzzling are a few potsherds found a quarter of a mile further in the same road, at what may be called He'i'tli'annanna Pishlankwi, or "Blue-wall north." Right alongside the road, nearly all about one of the small cedars that begin to abound here, and none more than a few steps distant, lay eighteen discoverable pieces. All but one had a black pattern on white; and the exception was a minute fragment that might well have come from an unpainted spot on a decorated vessel. The other seventeen pieces classify as follows:—

	Broad bands	Hatched
Inside black	2	7
Inside dark gray	—	3
Inside white	5	—
	—	—
	7	10

There is variety enough within this narrow compass to demonstrate against the possibility that all the pieces were remnants of one, or even of two pots, that happened to be broken here at some time. The white is of the unpolished type of period B. But the site seems most unlikely. The ground is sloping bed rock, covered only with thin patches of disintegrating slabs and sand. Fifty yards to the east is an elevation, the crest of one of innumerable spurs extending at right angles to the above mentioned mountain ridge. This spur looks like the natural spot for settlement in the vicinity; but search produced not a single evidence of occupation on the summit.

This site, if it really be such, with ancient He'i'tli'annanna on one side of it and more modern Kolliwa on the other, makes three in which no corrugated pottery was discovered.

SITE X.

The opposite is the case at nameless site X, where more than two thirds of a tolerable series was corrugated — every piece white. I cannot locate this site exactly. It is three or more miles from Zuñi, to the east of Kolliwa. Our first attempt to find the latter ruin was made with a youthful guide who proved not to know the way and led us to the right. At last we stopped in the middle of nowhere, — a sandy rolling tract away from water and nearly half a mile from the long cliff ridge at whose foot Kolliwa lies

further west. In several spots here pottery was thick; but the usual pebbles of sites of type B were absent, and only one piece of the normally frequent vesicular lava was found. Why anyone should settle in this deserted spot rather than in a hundred others about, I cannot understand. Perhaps it was at one time a cornfield; divested of its crop of piñons and cedars, its white sand might yet be made to yield grain; and the sherds may possibly be from jars brought to the growing field. The site certainly has all the typical marks of a Period B site in an exaggerated degree; but, as usual where material is sufficiently abundant, there was a sprinkling of black and of red pieces — the majority dull red outside, blackish inside. Not one of the 152 sherds bore any evidence of having been polished, as was customary on ornamented ware in period A.

SHUNNTEKKYA.

An old Zuñi woman who saw my young friends picking up sherds before her door, and learned that they were for me, brought a rag full which her father, six or eight years ago, had gathered, perhaps while sheep herding, and carried home to be ground and mixed with clay for new pots. I could not learn where the ruin is, except that it lies perhaps ten miles, as the Indians vaguely count them, to the southeast, somewhere behind Towwayallanna. I was loath to include such data; but as a count revealed perfectly typical period A proportions, and as the collector's motive would have led to no deliberate selection, I have added the figures.

"HAWWIKKU B."

The same considerations apply to a smaller lot subsequently offered to me as from Hawwikku, near Ojo Caliente, one of the three outlying farming settlements of the Zuñi. But here there is a second difficulty. Hawwikku was one of the seven cities; it has ruins of a church; and it was inhabited until the Pueblo rebellion. But a glance at the sample proved it to be of type B. The owner was questioned, but, as I had never been on the site, not with much definiteness; and I only elicited that the sherds were picked up, also for pottery making, at Hawwikku itself. He may have selected, by some fancy, only such pieces as happened to be of the earlier type; or he may have gathered on a spot near Hawwikku which represents a settlement of an earlier time than the historic Hawwikku. I have therefore called the place "Hawwikku B." The next investigator may possibly

identify it with little trouble. I was tempted to acquire further collections of the same kind, of which there must be many in the town; but while the Zuñi are a reliable people, it seemed wisest not to swamp myself with material from locations I had not seen.

Zuñi,

August 3, 1915.

POSTSCRIPT.

A delay in printing allows me to add references to literature, though these remain references, unfortunately, more largely than they reveal relations.

Bandelier in his various writings, summed up in his "Final Report" in volume IV of the American Series of Papers of the Archaeological Institute of America, distinguishes the earlier period of black on white ware from the later one that extends into historic time. He notes also that obsidian occurs only in ruins of the later era.

Dr. Fewkes spent part of his first stay at Zuñi in an archaeological reconnaissance somewhat more extended than mine, on which he has an admirable paper in the first volume of the *Journal of American Archaeology and Ethnology*. As Dr. Fewkes principally examined ruins as such, and makes no reference to potsherds, his and my preliminary essays present few points of contact.

In the twenty-second Annual Report of the Bureau of American Ethnology, Dr. Fewkes describes the results of two summers of exploration in the ruins on the Little Colorado and in adjacent territory. The Little Colorado pottery bears certain obvious similarities to ancient Zuñi ware, but there are also striking differences that impede immediate correlation. Dr. Fewkes' numerous illustrations of whole vessels do not suggest very strongly my sherds of type A, while his scanty references to corrugated ware seem to preclude the close connection of his finds with my type B. His predominating attention to complete vessels and my limitation to surface fragments may account for some of the discrepancy. But his frequency map on plate 70, with its revelation of a strong preponderance of red ware on the Little Colorado, disposes offhand of any complete cultural identity of this region with Zuñi A. It would be rash to guess whether the differences represent distinctions of available material, of period, or of contemporaneous but inherently diverse cultures.

This uncertainty is increased by the one published account of the Hemen-

way Expedition archaeological results, a description by Dr. Fewkes in the Putnam Anniversary Volume, of the discoveries by Cushing in his excavations at Hallonawa, across the river from Zuñi, and at Heshshota'utlla, fifteen miles east. Dr. Fewkes identifies this ware, now stored in the Peabody Museum, with that of the Little Colorado. Many pieces are clearly of Zuñi type A; but again, the prevalence of red ware does not fit with my surface results. Dr. Fewkes also sees a greater difference between this late prehistoric Zuñi pottery and modern Zuñi ware than I am able to perceive, whereas he appears to connect the latter with the northern Cliff-Dweller pottery, in type if not historically. Dr. Fewkes also scarcely refers to the possibility of continuous cultural development within an area, or to Spanish influences, while he stresses far more strongly than I should dare, clan migrations and hypothetical compositions of tribes. Granting these latter to have occurred to the extent that he indicates, it would seem to remain to be established, instead of assumed, that such accretions would seriously affect the type of ware in customary manufacture at a pueblo or in a group of towns.

Mr. N. C. Nelson, in the concluding paragraphs of his "Pueblo Ruins in the Galisteo Basin," in volume XV of the *Anthropological Papers of the American Museum of Natural History*, has a reference to glazed pottery in late prehistoric and historic times, which shows that ware of this type is chronologically of sufficient importance to receive closer attention at Zuñi in the future than I have given it in my cursory examination. Mr. Nelson's Galisteo specimens in the American Museum however reveal a very much heavier and rougher type of glazing than I have observed in Zuñi potsherds, and the style is apparently the usual one for some periods at Galisteo, whereas at Zuñi its employment seems always to have been sporadic or hesitating. A time correlation between the two regions will no doubt be possible on the basis of glazing, but superficially the wares of the two regions do not resemble each other enough for any off-hand identification.

A sequential determination which Mr. Nelson has made from stratification at San Cristobal, which promises to be of the utmost importance, remains unpublished and unavailable to date.

On the other hand, Dr. A. V. Kidder, in his "Pottery of the Pajarito Plateau," in the second volume of the *Memoirs of the American Anthropological Association*, sets up a valuable sequence of wares in another part of New Mexico. Careful study and critical judgment compensate in this work for the absence of any discovered stratification. Dr. Kidder distinguishes a black-and-white, a "school-house," a Frijolito, and a Pajaritan period. The ware of the second of these types he connects, though without identifying, with the Hemenway prehistoric material from Zuñi described

by Dr. Fewkes. This would make Dr. Kidder's first period correspond with my B, his last three with my A.

Dr. Kidder has also done me the favor to look over my sherds, and pronounces my period A ware to be, at least in general, of the type of the Heshshota'utlla pottery in the Peabody Museum. He also regards my sherds from He'i'tli'annanna as closely similar to the typical ware of a rude and presumably early culture discovered by him in the San Juan drainage, as yet undescribed and tentatively named "slab house." This correlation confirms the distinctness of the He'i'tli'annanna ware which I had implied at least by exclusion in my table 5, and is of the greatest interest in that it indicates the probability of another period, or at any rate definite sub-era, at Zuñi.

Dr. Kidder has also pointed out to me that the difference between dark and light corrugated ware is likely to be the effect of long continued weathering. This would indeed give some measure of age for exposed pieces, but probably does away with the distinction between dark and light corrugated pottery as essentially characteristic of period. Determinations of period will therefore have to be made, in this ware, by its total frequency relative to all pottery, as I had already inclined to do in my fifth table, or by the nature of the corrugation itself.

In spite of indisputable local and non-temporal differences, as attested for instance by the absence of Dr. Kidder's "biscuit" ware from Zuñi as well as by the distinctive character of glazing there; in spite too, of the paucity of my material, and the fact that all of Mr. Nelson's and part of Dr. Kidder's ceramic data remain unpublished, it appears to be clear that chronological, or at least sequential, determinations can already be made for at least three New Mexican regions, and that these evince certain correlations among each other. The successful conversion of the archaeological problem of the Southwest from an essentially exploratory and descriptive one, with interpretation based chiefly on Spanish documentary and native legendary sources, into a self-contained historic one, seems therefore at hand.

American Museum of Natural History,
February 12, 1916.

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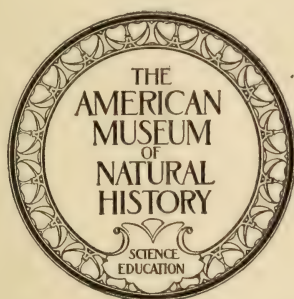
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ZUÑI KIN AND CLAN

BY

A. L. KROEBER



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BY A. L. KROEBER.

PREFACE.

This publication is the result of inquiries and observations made at the native town of Zuñi in New Mexico in June, July, and August, 1915, and during the summer months of 1916, as part of the Archer M. Huntington survey of Pueblo culture in the southwestern United States, under the auspices of the Department of Anthropology of the American Museum of Natural History. The work began as a study of kinship, but the manifold contacts of kinship with other phases of culture soon led to an amplification of scope. A collection of specimens illustrating Zuñi civilization was also made for the Museum. During the summer of 1916 Mr. Leslie Spier was engaged in archaeological exploration on behalf of the Museum in and about Zuñi, and his coöperation made possible a number of inferences which appear toward the end of the paper; besides which many other passages have been influenced by daily association and discussion with him. During the same summer Zuñi was visited by Mr. N. C. Nelson, Dr. A. V. Kidder, Mr. C. E. Guthe, Mr. E. S. Handy, Dr. P. E. Goddard, and Dr. R. H. Lowie. The opportunity thus afforded for discussion of problems on the spot proved exceptionally stimulating. The same is true of previous conferences with Mrs. Elsie Clews Parsons, whose series of intensive ethnological and psychological studies of the Zuñi is well known. Finally, talks with several earlier students of the Pueblo proved helpful to one who was entering the Southwestern field as a novice; among whom Mr. F. W. Hodge and Dr. Herbert J. Spinden should be especially mentioned.

August 22, 1916.

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INTRODUCTION.

The foundation of Zuñi society is the family. Life centers about the house. The clan is above all a ceremonial institution.

With the same steadfastness with which they adhere to their religion, the Zuñi cling with tenacity and warmth to their relatives. To every person allied to them by ties of blood, through either a male or a female relative, they are blindly loyal and instinctively affectionate. Only a degree less vigorous are the sentiments that attach them to the men and women married to their blood kin. Outside of this circle, all are but associates or acquaintances, near or remote, according to chance of circumstance. A daily companion, a sister's friend, a clan associate, a brother's house-mate, are friends who naturally support a Zuñi and whom he supports. All others, with but little distinction of speech, race, or nationality, are treated with unfailing affability, unless there be grave cause for the contrary; but they are regarded, as circumstances may dictate, with distrust, envy, or hate as readily as with the normal kindness that is so pleasing a feature of Zuñi behavior. Toward the stranger, reserve is fitting, but also amiability; and if he reciprocate with both qualities, whose combination constitutes Zuñi politeness, he is as sure of favorable treatment, and of needed assistance, as a member of the tribe. As continued intercourse cements the association without disturbing happening, American, Mexican, Pueblo, or even Navaho is held in warmer esteem than many a Zuñi, to whom indeed common customs unite, but with whom long acquaintance has perhaps resulted only in resented grievance, continued opposition, or fear of harm. The normal and unshakable heart and kernel of all these widening and diffusing circles, however, are the blood kindred, the family of blood kin in the wider sense as we ourselves use the word. Without a realization of this fact, it is possible to know what a Zuñi may do, but impossible to understand the emotions that dictate his actions.

The house belongs to the women born of the family. There they come into the world, pass their lives, and within the walls they die. As they grow up, their brothers leave them, each to abide in the house of his wife; but they and their children are constant visitors and intimate frequenters of the old home. Each woman, too, has her husband, or succession of husbands, sharing her blankets, and as her children begin to play about, their father's kin and household also resort to the house. So generation succeeds generation, the slow stream of mothers and daughters forming a current

that carried with it husbands, sons, and grandsons. Now and then a new dwelling may be built by all the inmates, or for a girl of the house by an enterprising husband; but in general the same walls, or re-erected ones on the same spot, compass the lives of woman after woman born within.

It is inevitable that life-long working, playing, eating, sleeping, and talking together should knit together with exceeding closeness the dwellers under one roof. In this sense the Zuñi may be said to follow maternal descent. The children of sisters, who have never known separation, must often stand nearer to one another in actual conduct than the children of brothers, who have grown up in separate homes and among distinct groups of associates. So far as Zuñi reckoning goes, however, the sentiments of kinship and affection are the same toward father and mother, toward the brothers and sisters of each, and toward the partners and children of son and daughter. A cousin on either the father's or mother's side is identically an older or younger brother, toward whom the same degree of oneness is felt. The house is basic in Zuñi life. Attached to her ownership of it is the Zuñi woman's position in her world. Upon her permanent occupancy of the house rests the matrilinear custom of the tribe. But kinship is thoroughly and equally bilateral. Take away from the Zuñi woman her possession of the home, and her apparent preëminence in relationship vanishes.

The clan is maternal, totemically named, and terms of relationship are applied to all members of it. There is no belief in descent from or kinship or spiritual connection with the animal or object that names the clan; nor are there taboos of food or otherwise toward it, though such prohibitions are observed by the Zuñi in matters distinct from clanship. A person is of the mother's clan, but the child of the father's: I am Turkey-people, I am Tobacco-people their child, a Zuñi will say, and will feel a substantially equal relation to each. The occasions on which he is chosen for some office, dignity, or duty on account of being the child of his father's people are nearly as numerous as those which fall to him as a member of his mother's. He may not marry a girl of his mother's clan; but neither may he wed one of his father's, unless no actual blood kinship with her is clearly to be traced; and even then the practice is disapproved. Such and such a house is readily identified as of the Coyote-people or Dogwood-people or Badger-people. But there is no one or primary clan house, no clan council, no clan head. In daily life it is common residence, and known blood common to individuals, and even friendship and neighborliness, that count. The clan is not thought of in ordinary personal relations of man to man, or man to woman. It is sisterhood or second cousinship that unites two women, not the circumstance of both being Eagle-people. It is only when a Zuñi priest is to be made, an idiot god to be impersonated, food to be brought to the

dancers in a tribal ceremony, that custom requires the men or women charged with these privileges or obligations to be members or children, as the case may be, of this or that clan. Take away the clans, and the forms of Zuñi religion will be studded with vacancies, will even have to be made over in part; but the life and work of day to day, the contact of person with person, will go on unaltered. The clans give color, variety, and interest to the life of the tribe. They serve an artistic need of the community. But they are only an ornamental excrescence upon Zuñi society, whose warp is the family of actual blood relations and whose woof is the house.

In the face of a hundred conflicting possibilities, it would be idle to conjecture that the clans were once an essential element of the Zuñi social structure, and conformed to a prevalent ethnological theory which rests the society of the less civilized nations upon the clan and deprives it of the family and household. How far this theory may truly accord with the customs of other tribes, I cannot say, the Zuñi being the first people with a fully developed clan system with whom it has been my fortune to associate. It is well to remember intently that the practices of many nations are likely to be many, and may vary to an astonishing degree. Ethnology would be a barren science otherwise. But it is equally wise ever to keep in mind that those men whom we are wont to denominate savages are equally men with ourselves, with the same equipment of minds and feelings as we harbor; and that therefore they are likely to possess only such customs as are practised at least in some measure by ourselves, or as rest upon emotions which familiarity with the customs in question would cause to seem natural to us. A society in which the family as we know it is entirely replaced by the clan, is thinkable. Yet it may be suspected that the fantastic novelty of such a scheme has helped to stimulate interest in the plan which would not otherwise have been directed to the lowly lives of savages; until, this view of their mode of existence becoming orthodox, it grew the fashion often to look only for clans, and to overlook actual family life, among nations whose society after all conforms in many respects to ours. I venture to believe that in many another totemic and clan-divided tribe the family of true blood relatives is fundamental.

With the view that the present state of Zuñi society is an altered one, and that it was preceded by a condition of the predominance of clan over family, it is thus vain to quarrel. If any one finds it more profitable to demonstrate that such and such must have been the practices of this or that or all nations at some time before we have cognizance of them, rather than to understand and weigh in a just balance their manners within the historic period, that satisfaction cannot be denied him: provided he does not proclaim or assume that the rearing of such hypothetical dogmas is the justify-

ing purpose, or the ultimate goal, of ethnology and history. Yet, it is also justifiable that those not infected with such theories, should exact much and specific evidence before inclining any favor to the view that the fundamental organization of the society of the Zuñi and similarly constituted peoples was once on a clan basis.

20²⁵

TABLE 1.
A ZUÑI GENEALOGY.

GENERATION I.	GENERATION II.	GENERATION III.	GENERATION IV.	GENERATION V.	GENERATION VI.
23. F. —, Crane. — +22. M. —, —	20. F. —, Crane. +120. M. —, —	102. F. —, Crane. +103. M. —, Dogwood (?)	101. M. Kyashna. Crane. 60. +137. F. —, Sun. —	105. M. Suni. Sun. 35. +108. F. —, Corn. — +107. F. —, Corn. — +106. F. —, Dogwood. —	110. F. Della. Corn. 17. 111. M. Charlie. Corn. 10. 112. F. —, Dogwood. 7.
				115. M. Sennalia. Sun. 116. M. Carl. Sun. 26.	
				117. M. Kutsuwa. Sun. 23.	
		19. F. "Nemossiantsitta. Crane. — +129. M. —, Bear.	18. M. "Nemossi." Crane. 45 +25. F. —, Dogwood. —	24. F. —, Dogwood. 5.	
	21. F. "Luisanhotta." Crane [Younger than 20] +130. M. —, —	15. F. —, Crane. [Older than 3]. +17. M. —, Badger. [Not kin of 1.] M. Hashshi. Crane. 60 +133. F. —, Eagle — +134. F. —, Frog —	16. F. Tsa'asiyetta. Crane. 50 29. F. Nanny. Eagle. 22 28. F. Blanche. Frog. 18		
131. F. "Leslianhotta." Badger. — +132. M. —, —	+26. M. —, Badger —	27. M. Shorty. Crane. 55 34. F. —, Crane [Younger than 34]	37. F. "Ailinantsitta." Crane. 35 +38. M. —, Dogwood	39. F. Nora. Crane. 16. +46. M. —, Turkey. 40. M. Wichi. Crane 41. F. Irene. Crane. 9. 42. F. Kuyye. Crane. 5.	43. M. —, Crane
		3. F. "Luisantsitta." Crane. 65 +4. M. —, [Navaho] —	5. F. —, Crane. 45 M. Lewis. Crane. 55. +35. Mrs. Lewis [Cherokee] "Coyote." 35	11. F. Margaret. Coyote. 13. 12. M. Chipai'u. Coyote 11. 13. M. Billy. Coyote. 6. 14. M. Robert. Coyote. 1.	
	51. F. —, Badger. [Not ex 131] +50. M. —, Dogwood	+1. M. "Luisantachu." Badger. 65	7. M. Lewis. Crane. 55. +35. Mrs. Lewis [Cherokee] "Coyote." 35		
		+2. F. —, Deer. —	6. M. —, Deer. 40. +33. F. —, Turkey — + 8. F. —, Dogwood. —	9. M. —, Turkey. 12. 10. M. —, Dogwood. 8.	
	+52. F. Tsaniasitsa. Badger. 80. — [Not kin of 1.]	60. M. —, Badger. +61. F. —, Turkey. [Not kin of 55] 53. F. —, Badger. 50. +55. M. —, Turkey [Not kin of 61] +54. M. —, Sun — +56. M. —, Dogwood. —	62. F. —, Turkey 2. 58. M. —, Badger. 30 57. M. Peter. Badger. 25 59. M. —, Badger. 22		
	30. F. "Lesliantsitta." Badger. [Not kin of 1.] 50. +31. M. —, Dogwood (?)	32. M. Leslie. Badger. 23.			

The first — means name not obtained; the second — means clan not known to No. 1.

I. KINSHIP.

In the following pages the meaning and use of the several kinship terms are discussed first, after which follows an analysis of the general features and inherent principles of the Zuñi system. References by number are to individuals in the genealogical table accompanying this paper. This table contains few names. The Zuñi do not like to tell the names of their kinsmen; and while the matter is interesting in itself, it appears to have no direct bearing on relationship. This reluctance of my friends made the work of compiling the table much slower than it would have been with a free use of names; but I did not care to press their scruples, and while two or three genealogies would have been preferable to one, this one seems sufficient to establish practically every trait of the system accurately. The Zuñi talk readily of each other's and their own clan affiliations, so far as they know them. These were recorded in the table. A dash in first position therefore means nothing more than that the name of the individual was not secured; but a dash in second place signifies that the informant, who is number 1 in the genealogy, did not know the clan affiliation of the person in question. The italicized figures following some of the clan indications give the approximate age of the individual in 1915. With a system of the type of the Zuñi one, this is important information which should have been obtained in every possible case, and even with other peoples age is a factor that on analysis may prove to be of more significance, in many instances, than has generally been assumed. I must apologize to my readers for the random order in the table of the numbers designating individuals; they represent only the sequence of the recording. I should have altered them to conform with the spatial arrangement of the genealogy, but for the increased liability of error in altering the figures, particularly in transfer between table, notes, and text, and in cross reference. As the genealogy is not over extensive, it may be that no serious inconvenience will be caused.

I write *c* for a sound of the *sh* type, *tc* for *ch*, *l* for surd *l*, ' after a vowel for the glottal stop and after a consonant for glottalization of the consonant. Final vowels are normally slurred and often unvoiced. The accent is invariably on the first syllable, with a weaker accent on the third in long words. An accented syllable either contains a long vowel or is followed by a lengthened consonant or by two consonants. Doubled letters for consonants, or two different letters, after the first and third vowels of a word, therefore indicate that these vowels are short; single letters, that the vowel

is long. For the few personal names in the genealogy, as well as for the native names of clans and ceremonial institutions in certain connections, a somewhat more European spelling has been followed, which needs no explanation. The symbol > may be read: "calls and refers to."

SUMMARY LIST OF TERMS.

Parent-child group

tatteu	father; father's brother
tsitta	mother
inniha	stepmother

There are no kinship terms for son and daughter

Grandparent-grandchild group

nanna	grandfather; grandson
hotta	mother's mother; granddaughter
wowwo	father's mother; woman's son's daughter

Brother group

pappa	older brother
kyawwu	older sister
suwe	younger brother, of a male
ikyinna	younger sister, of a male
hanni	younger brother or sister, of a female

Uncle-nephew group

kyakkya	mother's brother
kyasse	sister's child, of a male
kukku	father's sister
talle	brother's son, of a female
eyye	brother's daughter, of a female
hacci	mother's oldest sister
tsillu	mother's younger sister

Husband-wife group, non-vocative

oyye	wife
oyyemci	husband

Relations by marriage, collective

talakyi	husband of female relative; kin of wife
ulani	wife of male relative; kin of husband

THE INDIVIDUAL TERMS.

TATTCU, FATHER.

Father; stepfather; father's brother; father-in-law; wife's stepfather; first or second cousin once or twice removed, of an older generation and actually older than oneself; sometimes, father's sister's son or mother's brother's son, that is, first cross cousin, but in the observed cases the "father" cousins were considerably older than the speakers. Like all Zuñi terms for which the contrary is not specified, tattcu is used by both males and females. The older or oldest brother of the father, or some similar relative, is often called tattcu-Lacci, old father, if he is of an actual age that might naturally put him in the grandfather class; while a distinctly young tattcu, either the father's youngest brother, or a cousin who is called father, is likely to be denominated tattcu-ts'anna, little father.

35>1: husband's father.

5's husband>1: wife's stepfather.

101>1: mother's mother's younger sister's daughter's husband, *i. e.*, husband of first cousin once removed of older generation, also probably actually older than speaker. But while 101 calls 1 father and is called son by him, 101 and 7, the son of 1, are not older and younger brother, as might seem logically to follow, but 101 is kyakkya or mother's brother of 7. The difference of approximately twenty-five years between their ages seems to be felt as a barrier to their calling each other brothers; or possibly clan connection counts; for as older male of his mother's clan, 101 would be called kyakkya by 7.

110>7: father's father's mother's mother's younger sister's daughter's son, *i. e.*, second cousin twice removed and two generations older; also actually nearly twenty years older.

11>34: father's mother's younger brother, *i. e.*, great-uncle. By usual rule, 34 should be nanna, grandfather; but, either to emphasize that he is his sister's youngest brother, or because the actual difference of years between him and his grandniece is felt to be insufficient, he is termed father.

57>7: mother's older paternal half-brother's son, *i. e.*, first half-cousin. The difference in age is about ten years, the "father" being the older. 57 applies this term to 7 only when he is living in 7's house, where 7's children call him elder brother; when 57 lives in his own natal home, he calls 7 younger brother, *suwe*, *q. v.*

28, 29>7: tattcu-ts'anna: father's older sister's son. This instance in conjunction with the last indicates that the occasional parent terminology for first cross cousins springs from the actual age of the persons involved — 7 is considerably older than 28 or 29; for while the usage in this instance is reciprocal, 7 calling 28 and 29 his daughters, the "father" in the last example is mother's brother's son to his "child" but here he is father's sister's son. If the parent terminology were the result of any exogamous reckoning, one of the two kinds of cross cousin should always be the parent, and the other kind the child.

12>6: tatteu-Lacci: father's older paternal half-brother.

11>27: tatteu-Lacci: father's mother's younger brother, *i. e.*, great-uncle. 27 and 34 are brothers, but 34, who is only tatteu, not "old father," to 11, is perceptibly younger than 27.

TSITTA, MOTHER.

This term is applied to females standing in the same relationship to the speaker as the males called tatteu, except that it is not used to designate the stepmother, for whom there is a special word. There are also distinctive names for the mother's older and younger sister, hacci and tsillu, but these two terms do not replace tsitta, which is the more frequently employed.

7>3: mother; he speaks of her also as okkyatsi, the old woman.

57>35: mother's older paternal half-brother's son's wife, *i. e.*, first half-cousin's wife. As 57 calls 7, the husband of 35, tatteu only when living with him, it is probable that when he is at his natal home he refers to 35 as his ikkyinna, younger sister, because 7 then is his suwe, younger brother.

37>3: tsitta-Lacci, old mother: mother's older sister.

11, 12>35's older sister (non-Zuñi): tsitta-Lacci

7>19: tsitta-Lacci: mother's mother's older sister's daughter, *i. e.*, first cousin once removed, of older generation.

41>5: tsitta-Lacci: mother's father's older sister's daughter, *i. e.*, first cousin once removed, of older generation.

11, 12>35's younger sister (non-Zuñi): tsitta-ts'anna, little mother.

7>15: tsitta-ts'anna: mother's younger maternal half-sister.

3>19: tsitta-ts'anna: mother's older sister's daughter, *i. e.*, first "parallel" cousin. The standard terminology for this relationship is kyawwu, older sister. A possibly considerable difference in actual age is probably responsible for the "mother" designation in this particular case. A characteristic instance of Zuñi inconsistency on the side of pure logic is provided by the above-mentioned designation of 19 as tsitta-Lacci by 7, the son of 3; parent and child both call 19 mother, *viz.*, little mother and old mother.

TERMS FOR CHILDREN.

There is no specific kinship term in Zuñi for son, daughter, or child. Instead is used, in generic or collective references, tca'le, child, offspring, plural teawe. More frequent, when particular persons are designated, are aktsekyi, boy, and kyattsekyi, girl. As people grow older, they come to be called tsawwakyi, youth or young man up to middle age, and makkye or makkyonna, young matron; but the designations aktsekyi and kyattsekyi sometimes persist.

As might be expected, those who call other persons "father" and "mother," are called "child" by them. Thus it is that a man's brother's children, and a woman's sister's children, as well as cousins one generation younger, are denominated children; but the looseness that pervades all Zuñi kinship terminology causes frequent departures from schedule. When two persons are separated in actual age by an interval that is felt to be too great or too little to be characteristic of successive generations, the designation of the younger as child is often replaced by some other term; or the younger person will be called child, even though not of the next generation, if the difference in years between him and the speaker seems appropriate.

7>28, 29: kyattsekyi: mother's younger brother's daughters or cross cousins. They are considerably younger than 7. See the reciprocal designation under "father."

35>28, 29: kyattsekyi. What the husband calls his kin, the wife calls them also.

2>7: aktsekyi: former husband's subsequent son. He calls her inniha-Lacci, old stepmother.

16>7: aktsekyi: mother's maternal half-sister's son, *i. e.*, first "parallel" half-cousin, of same generation but younger than self. This designation among parallel cousins deprives the occasional parent and child terminology between cross cousins, which has already been discussed, of the last possibility of being explained by exogamic influences. It is clearly only because 16 is notably older than 7 that she calls him her boy or son. The reciprocal designation of 16 by 7 was not obtained; it seems that he must call her mother; but I was told, in another connection, that he would call her husband nanna, grandfather. Perhaps there was implication in my informant's mind of a specific but unacknowledged or former husband, who was still older than 16, and therefore of possible grandfather age for 7.

52>1: aktsekyi or tsawwakyi: stepson by husband's former wife. He calls her inniha, stepmother. As 1 is well over sixty, his designation even as "young man" is literally as inappropriate as that of his nearly middle-aged son, in the last instance, as "boy." It is clear that the words denoting children are not used strictly with their ordinary non-kinship significance when they are applied to relatives.

5>41: kyattsekyi: mother's younger sister's daughter's daughter, *i. e.*, first cousin once removed, of younger generation and actually younger than the speaker. Reciprocal: tsitta-Lacci.

1, 3>7, their son: aktsekyi, and 35, their son's wife: kyattsekyi, when 7 and 35 were first married; but as soon as a child was born, 7 was addressed and referred to only as an tatteu, 'its father,' and 35 only as an tsitta, 'its mother.'

1>the writer: tsawwakyi, and added: ho tomm tatteu, I am your father, when told that his nanna or grandson called the guest kyakkyā, mother's brother.

1 spoke of Dikyī an makyonna, Dick's young matron, when referring to a woman whose father's American name is Dick.

INNIHA, STEPMOTHER.

A Zuñi stepfather is a father, but a stepmother is called inniha instead of tsitta. The same term is sometimes applied to the wife of a cousin of older generation, though in other instances such an older cousin-in-law is called mother, just as the wife of a cousin of one's own generation is a sister. There may be a principle that controls the choice between the appellations mother and stepmother in such cases; but it has not become apparent, and it is likely that we are dealing with another instance of Zuñi indifference to consistently detailed system. It is not known whether inniha is used only in reference or vocatively also.

1>52: father's second wife. Reciprocal: child.

7>2: inniha-lacci, old stepmother: father's first wife. Reciprocal: child.

110>35: father's father's mother's mother's younger sister's daughter's son's wife, *i. e.*, wife of second cousin twice removed and two generations older. 35 is of an age that she might have been 110's mother. As she is the only wife her husband has had, her designation as stepmother is the harder to understand.

11, 12>25: father's mother's mother's older sister's daughter's son's wife, *i. e.*, wife of second cousin once removed of older generation. The husband of 25 may have been married before. It is conceivable that 11 and 12 knew the first wife as mother, and therefore look upon her successor as stepmother.

NANNA, GRANDFATHER, GRANDSON.

Grandfather; grandfather's brother or half-brother; collateral blood relative two generations older than the speaker, or sometimes one or three generations removed but of approximately a grandfather's natural age; greatgrandfather; subsequent or former husband of a grandmother; brother or half-brother of a grandmother, at least on the paternal side;¹ presumably, a grandparent's brother-in-law; and, in general, the relatives standing in any of these relations to one's wife or husband; conversely, grandson, whether born of a son or a daughter, and whether a man or a woman is speaking; brother's or half brother's grandson, at least for a man speaking; collateral male blood relatives two generations younger or of approximate grandchild age; any greatgrandson; husband of a granddaughter; husband of a woman's sister's granddaughter; and, in general, the persons standing in any of these relations to one's wife or husband, and

¹ Terms for mother's mother's brother, and for a man's sister's grandson were not obtained. It is conceivable that they might be nanna, or respectively kyakya (-lacci) and kyasse (-ts'anna).

the husband of any younger blood relative called hotta or granddaughter. *Nanna* is one of the two Zuñi kinship terms that are verbally reciprocal. It is often, but not exclusively, used with the additions -*Lacci*, old, and -*ts'anna*, small, when it denotes persons respectively of greatgrandfather and greatgrandson generation.

52>57: woman's daughter's son.

12 would >16's husband *nanna*: husband of father's mother's older maternal half-sister's daughter, *i. e.*, husband of his first half cousin once removed. As this man would be of his father's generation, the terminology may spring from the fact that 12's father, 7, calls 16 *tsillu*, mother's younger sister, though she is of his own generation.

7>17: mother's older maternal half-sister's husband, *i. e.*, maternal aunt's husband. As 17 is the father of 16, 7's calling him grandfather is consistent with his calling her aunt. The source of both designations is to be found in the appellation which 1, the father of 7, has for 17: he calls him *kyakkya*, mother's brother, either because he is his wife's older sister's husband and is actually the senior; or because they are members of the same clan, though not blood kin.

12>17: *nanna-lacci*; this follows from his father 7 calling 17 *nanna*.

A son of 11 would call 1, his mother's father's father: *nanna-lacci*.

1 would call a son of 11, *i. e.*, his son's daughter's son: *nanna-ts'anna*.

52>12: *nanna-ts'anna*: stepson's son's son.

1>14: *nanna-ts'anna*: son's son, 14 being an infant. This is one of two recorded cases where grandparent-grandchild terms with the suffix -*Lacci* or -*ts'anna* denote a grandparent or grandchild; in all other instances actually observed, the enlarged appellations applied to greatgrandparents or greatgrandchildren or collateral relatives of their class. The -*Lacci* and -*ts'anna* words seem therefore to have some specific implication to kindred removed from the speaker by three generations; but as always the Zuñi are inaccurate, and sometimes think of actual age instead of generations.

HOTTA, MATERNAL GRANDMOTHER, GRANDDAUGHTER.

Hotta is the second Zuñi kinship term which is verbally exactly reciprocal. It is used for females, by speakers of both sexes, exactly as *nanna* is for males; except that there is a special term, *wowwo*, for the father's mother and her collateral or ancestral female relatives. A woman's granddaughter is *hotta* when she is her daughter's daughter, *wowwo* when she is her son's daughter; but a man calls all his granddaughters *hotta*. It is curious that a verbally reciprocal term like *hotta* should be so flagrantly imperfect in its conceptual reciprocity; but there is of course a logical though less offensive lack of reciprocity in the two central meanings of *nanna* also.

57>52: mother's mother.

41>3: mother's mother's older sister.

3>41: younger sister's daughter's daughter.

15>37: younger maternal half-sister's daughter, *i. e.*, niece. There may be an error in my notes here, since 37 was said to call 15 *hacci*, mother's oldest sister. If the record is correct, this is one of the rare instances of a pair of Zuñi relatives applying terms to each other which do not involve the same interval of generations.

WOWWO, PATERNAL GRANDMOTHER, WOMAN'S SON'S DAUGHTER.

This term denotes the father's mother; her mother; her sisters; her female cousins; presumably her brother's wives; presumably the former or subsequent wife of the father's father; and in general any female relative on the father's side older by two generations or the corresponding age than the speaker; also, presumably, the same relatives of one's wife or husband. It also denotes a woman's son's daughter, thus being a verbally exactly reciprocal term.

7>52: father's stepmother.

11, 12>52: *wo-lacci* (children's abbreviation for *wowwo-lacci*): father's father's stepmother, *i. e.*, paternal greatgrandmother.

11, 12>15: *wowwo-lacci*: father's mother's older maternal half-sister, *i. e.*, great-aunt.

52>11: *wowwo-ts'anna*; stepson's son's daughter.

BROTHER AND SISTER RELATIONSHIPS.

The same lack of symmetry that appears in the three Zuñi terms for four or eight kinds of grandparents, crops out in their brother-sister nomenclature; eight possible relationships and five words. A man uses four of these, a woman three. Of the three usually recognized factors involved in this class of kinship, sex, sex of the speaker, and relative age, all three find expression, but only one, age, is expressed in all of the terms.

All five of the names for brothers and sisters denote:—

1. Children of the same father and mother.
2. Half-brothers and sisters.
3. Presumably also stepbrothers and sisters, that is, persons one of whose parents married a parent of the other.
4. First, second, or third cousins, or any collateral blood relatives, either on the father's or mother's side, of the same generation as the speaker; or, if of an actual age that would be normally compatible with their being full brothers or sisters to each other, even of a generation older or younger. There are some instances of cousins calling each other by terms not of the brother-sister class, but in these cases there is

an intruding factor, such as a marked difference of age between the cousins, or between their parents or ancestors who first disregarded the equality of generations.

5. The husband of any "sister," or wife of any "brother," according to the preceding four definitions.

6. There is also application of the terms to non-kindred clan members of an age approximating that of the speaker.

The fourth and fifth of these classes of "brothers" and "sisters" allow theoretically of several applications of the age factor which the Zuñi by his terminology shows to be uppermost in his mental processes.

As for brothers-in-law and sisters-in-law, the rule is to consider not the age, compared to one's own, of the acquired affinity, but of the relative married to the affinity. The wife of an older brother may be younger than oneself, but she is an older sister nevertheless.

As for cousins and the like, it is clear from the examples, as well as from the statements of the Zuñi, that in the case of the descendants of a brother and sister, actual age is again not regarded, but the woman's offspring is reckoned as the older. The priority of the female line finds expression in attributed seniority.

It would be illuminating to know definitely what the Zuñi would do if the sex of successive generations alternated in the line of descent; which of two second cousins, for instance, would be the older if one were sprung from the son of a sister and the other from the daughter of a brother. In the absence of evidence, it may be conjectured that the seniority assumed between the first cousins would be handed down to and repeated by their children, and so on for succeeding generations; until the original brother and sister being forgotten, a reversal of terminology might ensue to accord with the more recent part of the genealogy. Moreover, if in the lapse of time there came to be persons of quite different age within the same generation, the brother-sister seniority between them would certainly be replaced by one of the parent or uncle or even grandfather class. It would be interesting to follow out a few such cases in full detail. An ideal scheme is as important as it is easy to grasp, but its true place in the life of a people becomes intelligible only in the light of the complications, difficulties, and exceptions it encounters. It would be fascinating if the Zuñi had been better able than we to devise systems that met all conditions logically; but there is no reason to believe it.

As between collateral relatives into whose kinship status the sex of their ancestors does not enter, such as cousins descended from two brothers, or from two sisters, absolute age and not seniority of the parents is normally the deciding factor in the names they give each other; but the degree of actual adherence to this plan is also not known.

PAPPA, OLDER BROTHER.

7>34: mother's younger brother, *i. e.*, uncle. Strictly, this man should be called *kyakkyä*. He is perhaps ten or more years younger than his sister, but probably twenty years older than his nephew. Possibly a difference of age between him and an older brother (number 27) was sufficiently felt to make one designation for them seem inappropriate; or there may be some unknown personal factor.

7>18: mother's mother's older sister's daughter's son, or second cousin, older than the speaker. The explanation rendered was that of their two maternal grandmothers, that of 18 was the older sister.

34>32: father's younger sister's son, or first cross cousin. This is an interesting case because the "older brother" is twenty-five or thirty years the junior, and his mother is also younger than 34's father. The reason given was that "the father of 34 came out of the house of 32," which is of course the house of 32's mother and of the mother of 34 himself. In other words, the determining factor to the native mind in this instance is the house, the concrete expression of the female element in blood kinship: the clan is not even thought of.

7>6: older paternal half-brother.

12>9, 10: father's older paternal half-brother's sons, or first half-cousins. The reason given was that the father of 9 and 10 is older than the father of 12. This is a more convincing case than the above relationship of 7 and 18, because 12 appears to be intermediate in age between 9 and 10.

7 calls the husband of 5, his older maternal half-sister, *pappa*, in addressing him "because 5 is older than 7." In referring to 5's husband in his absence, 7 speaks of him either as *pappa* or *honawan talakyi*, our son-in-law.

37>18: mother's mother's older sister's daughter's son, or second "parallel" cousin. 18's grandmother was older than 37's, but he himself is also older.

30>1: older brother's daughter's husband, *i. e.*, nephew-in-law. But as 1 is older than 30, the latter may feel it inconsistent to call him child or woman's brother's son according to rule. Also, 1 and 30 are *hamme* or members of the same clan, though they deny being *iannikyinnawe* or blood kindred; and it is therefore still more likely that 30 called 1 her older clan brother long before they became connected by marriage. Reciprocal, *kyasse, q. v.*

7>32: *pappa* or *pappa-ts'anna*, little older brother: mother's father's younger sister's son, or first cross cousin once removed. Actually the speaker is the senior by a dozen years. The *-ts'anna* probably indicates to the *Zuñi* that 32 is in fact the younger. His being the *pappa* would be in accord with his being descended from the sister and 7 from the brother; but in addition he is a generation older. The father of 7, 1, calls 30, the mother of 32, *kyasse*, sister's child, on the basis of their being members of the same clan.

11 and 12, the children of 7, call 32 by two terms. Sometimes he is their *tattu* or father, which is logical in view of the fact that he is reckoned their own father's brother. Sometimes they call him *pappa*, which accords nicely with the real ages of all concerned. As this varying terminology for the same person reveals the complete *Zuñi* indifference to the factor of generation when there are other considerations, it is not surprising that these children do not dream of calling their playmate *nanna* merely because there is a generic underlying principle that any male two generations older is a grandfather.

7>57: *pappa-ts'anna*, little or younger older brother: father's younger paternal half-sister's son, or first half-cousin. The older brother is about ten years younger, but again he is in the female line of descent. It must be added that 7 uses this designation only in 57's house; when 57 lives with 7, as often happens, 7 becomes the father instead of the younger brother.

11 and 12, the children of 7, call 57 *pappa*, and he reciprocates by calling them younger sister and younger brother; apparently because in their house their father is also his father. The actual ages also accord well with this designation.

11 and 12 call 58 and 59, the half-brothers of 57: *pappa*. The simplest explanation is that if 57 is their brother, his brothers must also be their brothers. Again the ages fit. Actually 58 and 59 are the father's father's younger paternal half-sister's sons, or first half-cousins once removed, of 11 and 12.

57>6: *pappa-ts'anna*: mother's older paternal half-brother's son, or first half cousin. Here the principle of seniority being attributed to the female line is violated. As according to this principle 57 should call 6 his suwe or younger brother, we may conclude that he calls him *pappa* instead because 6 is in fact considerably older, or because he is the older brother of 7 with whom 57 stands in a personal relation of especial intimacy; and that he adds the toning down *-ts'anna* in consequence of a compromising concession to the principle he has just violated. If this inference is correct, *-ts'anna* would in this instance not denote, as is customary, actual juniority, but would represent the fictitious juniority of the male line.

The term *pappa-lacci* was stated to be applied to the oldest brother, as distinct from any older brother; but no examples of its use were obtained.

KYAWWU, OLDER SISTER.

18>16: mother's mother's younger sister's daughter's daughter, *i. e.*, second parallel cousin. 16's grandmother was younger than 18's, but 16 is older than 18; in fact he sometimes calls her *tsitta*, mother, instead of elder sister.

7>25: mother's mother's older sister's daughter's son's wife, *i. e.*, second cousin's wife. The simplest explanation is that 7 calls 18, who is his blood kinsman, older brother, and therefore regards 18's wife 25 as his older sister.

11>28: father's mother's younger brother's daughter, or father's first cross cousin. The father, 7, calls 28 his daughter; starting from this fact, it is only logical that his real daughter 11 should call 28 sister; and as 28 is the older, that she should call her older sister.

7>37: mother's younger sister's daughter, or first parallel cousin. As 37 has the younger mother, she must be *kyawwu* because she herself is older than 7.

37>5: mother's older sister's son, or first parallel cousin. This relationship is the opposite of the last, and the identical terminology establishes that for parallel cousins the Zuñi consider the seniority of the cousins themselves and not that of their parents. 5 is older than 37.

7>5: older maternal half-sister. In referring to her, he sometimes calls her *okkya*, *q. v.*

35 called 5 *kyawwu* when she was first married to 5's younger half-brother 7. After the birth of their first child, 11, both 7 and 35 ceased calling her *kyawwu* and addressed her as an *kukku*, 'its father's sister.'

A man married to a girl will call her, before the birth of his first child, *awan kyawwu*, 'their older sister,' that is, older sister of the children in the natal home, her younger brothers or sisters.

SUWE, YOUNGER BROTHER OF A MAN.

34>7: older sister's son. Reciprocal, *pappa, q. v.*

32>7: mother's older brother's daughter's son. Reciprocal, *pappa, q. v.*

32>34: mother's older brother's son. Reciprocal, *pappa, q. v.*

57>7: mother's older paternal half-brother's son. Reciprocal, *pappa, q. v.*

57 also calls 7 *tattu*, *q. v.*

57>12: mother's older paternal half-brother's son, *i. e.*, child of 7 in the last example. Reciprocal *pappa, q. v.*

1>36's husband: wife's younger sister's husband.

12>13: younger brother.

18>7: mother's mother's younger sister's daughter's son. Reciprocal, *pappa, q. v.*

13>111: father's mother's mother's older sister's daughter's son's son's son, *i. e.*, third cousin once removed of younger generation but older than the speaker. Actually, the two boys appear to address each other by their American names, but it was stated that if they employed kinship terms, 13, though younger, would call 111 younger brother "because the father of 111 calls the father of 13 older brother or father." This explanation is of interest as another instance of the fact that the Zuni has his own interpretation of his rules of kinship as well as his own rules, and that we cannot understand or even know his practices through merely learning his avowed formal principles of society and then applying them.

IKKYINNA, YOUNGER SISTER OF A MAN.

1>36: wife's younger sister.

57>11: mother's paternal half-brother's son's daughter, *i. e.* first half-cousin once removed, younger than self. He calls her father either younger brother or father.

12, 13>24: father's mother's mother's older sister's daughter's son's daughter, or third cousin. The reason given was that 12 and 13 are themselves older than 24. On the other hand, their father is younger brother to 24's father.

HANNI, YOUNGER BROTHER OR SISTER OF A WOMAN.

11>13: younger full brother. Used both in address and in reference.

15>19: mother's older sister's daughter, or first parallel cousin.

37>7: mother's older sister's son, or first parallel cousin. In both this case and the last, the reason for the terminology must be that the speaker herself is older, since her mother is younger.

5>37: mother's younger sister's daughter, or first parallel cousin younger than self and born of a younger mother.

11 > 111: compare 13, the younger brother of 11, calling 111 *suwe*.

110 "would" call 11: father's father's mother's mother's younger sister's daughter's son's daughter, or third cousin once removed of older generation than the speaker. The reason given was that 110 is older than 11.

KYAKKYA, MOTHER'S BROTHER.

This term covers not only the mother's brother but a variety of collateral relationships. In all cases, however, it refers to a male relative of the mother older than the speaker. It is also used for older unrelated males of the mother's, that is, of one's own clan.

7 > 27: mother's younger brother.

29, 41 > 7: mother's father's older sister's son, *i. e.*, first cousin once removed, of an older generation and older than the speaker.

39, 41 > 18: mother's father's mother's older sister's daughter's son, *i. e.*, second cousin once removed, of an older generation and actually older.

7 > 101: mother's mother's older sister's daughter's son, or second cousin. 101 is at least twenty-five years older than 7. The connection between them is entirely through female relatives. This makes them members of the same clan. Those addicted to thinking of primitive people in terms of clan status, will recognize in this terminology a reflection of clan fellowship. I do not see any need of going beyond kinship in the search for an explanation. 101 is an actually older relative of 7 through 7's mother. This is enough to make him 7's *kyakkya* for the Zuñi, who care little, in their nomenclature, about nearness and remoteness of collaterality or the exact number of generations by which each of two kinsmen is descended from their common ancestor.

1 > 17. Here, on the other hand, is an instance of a term applied because of clan membership. 17 is the husband of 1's wife's older half-sister; but this, according to Zuñi rule, would make him 1's older brother, if it made him anything, and not his mother's brother. They both belong, however, to the Badger clan; and there can be little doubt that it was on account of this clan fellowship, and this alone — for 1 specifically denies any traceable blood kinship — that 1 was in the habit of denominating 17, his presumably older clan mate, *kyakkya* before they became married to sisters, and that he continued this appellation subsequently. But the point that obtrudes is that 1 and 17 reject consanguinity, while 7 and 101, who are also clan mates, avow and specify it. As long as the simpler and more commonly applicable explanation by kinship is available, it seems strained, accordingly, to extend the clan principle of interpretation to such cases. This contention will no doubt be readily admitted for the particular case in question, and perhaps for Zuñi kinship terms in general; but it is just as valid as a general working method, though it is a method that has frequently not been followed. It seems a fair requirement that the burden of proof should *a priori* always be on him who interprets so near and universal a phenomenon as kinship recognition in terms of so rare, variable, remote, and peculiar an institution as the clan or exogamous subdivision of a community. If it had not been the prevalent fashion to look upon ethnological facts primarily as a field in which an inclination to formulate theories could find easy exercise, this

principle would not only have been long ago conceded, but more frequently lived up to.

13>the writer: mekkyekkye, for me-kyakkyā, that is, "American mother's brother." As a member of the household not married into it, my status was clear; I could only be blood kin of the woman of the house. The choice therefore lay between grandfather, mother's brother, and brother; and the middle term was obviously the most appropriate in view of our ages. The boy of six who seems to have spontaneously originated this appellation, certainly was not concerning himself with my clan membership, in fact probably had never thought of it; but he was thinking in terms of my relation to the inmates of the house. On the other hand, my actual ikkyinna, who should therefore have been his "mother's younger sister," tsittat's'anna or tsillu, was very inconsistently called kyawwu or older sister by him and his brother and sister.

KYASSE, MAN'S SISTER'S CHILD.

Kyasse and kyakkyā are the only kinship terms in Zuñi which are conceptually exactly reciprocal. As they are both derived from the stem kya-, the one by reduplication like nanna, wowwo, pappa, the other by an unexplained suffix -se which can hardly be much else than a diminutive in force, whatever its origin, their verbal reciprocity also is at least substantially complete. It is possible that their common stem is the same as that of kyawwu, older sister.

101>7: reciprocal, kyakkyā, *q. v.*

27>7: reciprocal, kyakkyā, *q. v.*

27>37: man's younger sister's daughter.

1>30: the reason given was that "he is older than she." As they are not blood kin, the unexpressed part of the explanation is that they belong to the same clan. That she happens also to be his wife's father's younger sister is a subsequent accident that can hardly have been the cause of the nomenclature, since kyasse, so far as it refers to generation, denotes a person of younger generation, whereas the woman in question, though junior in years, is of the generation older than the speaker. Reciprocal pappa, *q. v.*

KUKKU, FATHER'S SISTER.

Besides the actual sister of the father, the term kukku applies also to the father's first or second cousin, or his niece, or cousin of a younger generation. It does not always refer to persons older than the speaker; but it does always denote a female relative of the father. Talle and eyye taken together are the conceptual reciprocal of kukku. Kukku is also applied to any woman considerably older than oneself who is a member of one's father's clan.

12>5: father's older maternal half-sister.

3>30: father's younger sister; younger than the speaker.

7>30: 7 is the son of 3. He presumably does not call 30 kukku because of his blood relationship to her, but because his father 1, is a clan mate though not blood kin of 30. On this basis of membership in the same clan, 1 is the older brother of 30; and a following out of this terminology makes 30 the kukku of 7. On the basis of true consanguinity, 30, as a female two generations older than 7 and related to him through his mother, would apparently be his hotta or maternal grandmother. It may be conjectured that the terminology based on clan connection with the father was in this instance given precedence over the blood relationship through the mother, because of the ages of the parties: 30 does not seem very much older than 7, and is obviously not his senior by the normal interval of a grandmother.

11, 12>16: father's mother's maternal half-sister's daughter, or father's first cousin.

28>37: father's younger sister's daughter, or first cross cousin, older than self. The usual term in such cases seems to be older sister.

11>37: father's mother's younger sister's daughter, or father's first parallel cousin.

11>41, the daughter of 37: kukku-ts'anna, "little kukku": father's mother's younger sister's daughter's daughter, or second cousin, actually younger than the speaker. The theoretical nomenclature would be "sister" — either "older" because 11 is related through her father and 41 through her mother, or "younger" because 41 is younger than 11. The term really used seems to have been transferred by 11 from 41's mother to 41 herself, with a characteristic qualification in the appended "little." Once the shock to consistency is eased by such devices as this suffix, a wide range of terms becomes about equally suitable for any given type of relationship according to a variety of considerations.

TALLE, WOMAN'S BROTHER'S SON.

This term is the male, as eyye is the female, reciprocal of kukku, father's sister. In ceremonial usage it is reciprocal to tattu, father. When a gift is made to an old man, he says: "tallemo," and is answered "tatteumo." It is curious that the stem talle should be used ceremonially by males, and in daily life only by females. A possible connection of the terms talle and talakyi is commented on under the latter head. It is also not unlikely that talle is etymologically connected with tattu, father: in this case its original meaning would probably have been son or possibly man's child, and the ceremonial tallemo would be a survival.

5>12: woman's younger maternal half-brother's son.

EYYE, WOMAN'S BROTHER'S DAUGHTER.

Eyye is the female reciprocal of kukku, whether the latter denotes the father's own sister, a collateral female relative of the father, or the daughter of the father's own sister.

5 > 11: woman's younger maternal half-brother's daughter. Reciprocal, kukku.

The sister of the father of 32 calls the sister of 32 eyye and is called kukku by her.

41 > 11: woman's mother's mother's older sister's son's daughter, *i. e.*, second cousin of speaker's generation but older in years. Reciprocal, kukku-ts'anna, *q. v.*

It was stated that a girl called her mother's brother's daughter either eyye or hanni, younger sister. The former would obviously be an extension of her mother's own designation for the young woman in question.

HACCI AND TSILLU, MOTHER'S SISTERS.

The sisters of one's mother are mothers in Zuñi: tsitta-Lacci, old mother, and tsitta-ts'anna, little mother, are often used to designate the sisters older and younger than the own mother. In addition, there are two terms, hacci and tsillu, which have the same meaning, but are not very frequently employed. Hacci in particular was not heard used: informants volunteered the term and stated that it meant the same as tsitta-Lacci, except that it was restricted to the oldest one of all the mother's sisters. Tsillu perhaps is any younger sister of the mother; it is also applied to the tsillu's daughter, at least if her youth is not too discordant — much as kukku is.

The status of these two terms, especially hacci, appears to be analogous to the condition of Hano Tewa tutu'uη, father's brother, which "may be" used in place of tada, father or father's brother. Similarly, just as the reciprocal of Hano tutu'uη is "obsolescent" or rarely employed, so Zuñi hacci and tsillu have no reciprocals of their own, but call their sister's children simply children.

Tsillu is probably from the same stem as tsitta, mother.

37 > 15: hacci: mother's older (and oldest) maternal half-sister. The reciprocal in this case was said to be hotta, granddaughter.

37 > 16: tsillu: the daughter of this hacci 15. 16 is older than 37. The difference in years between the oldest and the youngest child of a Zuñi mother is likely to approximate a generation, a consideration which may be suspected to have been of influence upon the terminology in this and similar cases.

7 > 16: tsillu: mother's older maternal half-sister's daughter, or first half-cousin older than the speaker. The relationship is the same as that of 37 to 16. This is 7's only tsillu, at present; presumably he called 36, his mother's younger full sister, tsillu while she lived.

TALAKYI.

The inmates of a house, apparently the men married into as well as the men born and the women living in it, call a young man married to a girl inmate; talakyi. He in turn calls them his talakwe, -kwe meaning people. He also speaks of their home which he has entered as his talawa; -wa is a

locative ending. The term *talakyi* is really generic, since even house mates younger than the bridegroom, and his father-in-law, who originally himself was, and to his elders still is, a *talakyi* in the same house, call the newcomer *talakyi*. The term therefore transcends both the matrilinear principle and the kinship factors most important in the *Zuñi* mind, and illustrates pregnantly the influence of the house. At the same time the word may be a true kinship term in origin. It is probably connected with *talle*, denoting a woman's brother's son, which in turn appears to be from the stem of *tattu*, father, used in the quasi-reciprocal sense of son. The *talakyi* was therefore in the first place the new son of the household; and, after the word had crystallized into this significance, the inclination toward reciprocity, which in spite of its formal looseness is so deep set in the *Zuñi* mind, began to operate, until the "son" named the members of his new home by a collective form of the same term. A derivative of the same stem, *takkyikwe*, has come to mean an entirely different thing, the people of one's father's natal home.

As *talle*¹ is a woman's brother's son, and *talakyi* a son-in-law or bridegroom, the similarity of the terms might be interpreted as indicative of a present or former identity of the persons. This would mean that a woman's brother's son came into her home to marry her daughter, his cross cousin. The *Hopi* are said to recognize and practice cross cousin marriage, and the *Hano* have customs which on their face can be interpreted equally well as surviving vestiges or incipient rudiments of the same institution.² The *Zuñi*, however, like the *Acoma*, scorn the imputation of this practice; and the interpretation first given of the history of the meaning of *talle* and *talakyi* seems far more consonant with their customs and sentiments. As regards the *Hopi* and their neighbors the *Hano*, it will require much more information than is now available to determine whether their traces of cross cousin marriage represent a sporadic, secondary, and perhaps recent influence, or are remnants of an old and fundamental set of institutions.

1 > 5's husband, his wife's daughter's husband: *talakyi*. The vocative reciprocal is *tattu*, father.

7, the son of 1, might also call³ the husband of 5, his older maternal half-sister: *talakyi*, though both 7 and 5 have left their natal home and the husband of 5 would presumably be considerably the senior of 7.

The husband of 5 calls her natal house,⁴ in which her mother 3 still lives, though 5 herself maintains a separate establishment, *talakwe*.

¹ Perhaps *talla*: *Zuñi* final *e* usually proves to be a *when* carefully pronounced.

² Barbara Freire-Marreco, *American Anthropologist*, n. s. xvi, 286, 1914.

³ In reference only; vocatively he would say *pappa*, older brother.

⁴ This probably means the inmates of the house.

26 > 17, his wife's daughter's husband: talakyi.

1, to explain why he did not know more about 20, his wife's mother's older sister, and her husband 120, said: tommt ho awan talakyi, I am only their son-in-law.

This old couple, 20 and 120, he further stated, would call him k'oloktakwe awan talakyi, Crane-people's son-in-law, on account of his marriage to their daughter 3 of the Crane clan. This expression is exactly parallel to the commoner one by which a person calls himself the child of his father's clan: ho tonnacikwe, ho pikteikwe awan tea'le, I am Badger-person, I am Dogwood-people their child, 1 would say of himself in Zuñi usage.

yam talawe ime means that a man is living, or that he is momentarily, at the house which he joined at marriage, literally: "his-own at-place-of-relatives-by-marriage he-sits."

Talekyanna was once recorded with the usual meaning of talakyi. It appears to be an objective case form.

ULANI.

Correlative with talakyi is ulani, specifically the son's wife, or the wife of a man who was born and reared in one's home but has married out; and reciprocally, in its collective form ulakwe, the term is used by the girl for the relatives or former house mates of her husband.

1 > 35: ulani. Reciprocal, tattcu.

35 calls the house of 3, or its inmates: ulakwe.

ula ime, "in-the-house-of-her-parents-in-law she-sits," is said of a woman who contrary to custom abandons her own home to follow her husband to his. There are a number of such marriages in Zuñi at present: family quarrels, jealousy on the husband's part, and perhaps other causes, are cited as motives. It is said that the number of women living in their husband's house is increasing. This may be so; but the practice, though irregular, is old. It is discussed again in the section dealing with the clan.

TAKKYIKWE.

The takkyikwe are the people of the father's house, on whom devolves the washing and burial of the corpse, though scarcely any one ever dies in his takyinna or father's residence: men live in their talawa or wife's home, women and children in their kyakkwe or mother's house, literally simply house. Takkyikwe must of course be derived from the stem of tattcu, father.

OTTSI-NAWA.

Ottsi-nawa is a term used by any sister for her full, half, or collateral brothers, irrespective of seniority or juniority. The form is plural or collective; the specific singular is ottsi, which means literally "male."

Otsi is supplementary to pappa and hanni, never excluding persons so called; and it is used only in reference, not vocatively.

12 is 11 an otsi, "11 her brother"; 13 is the same.

5, 37 > 7, 18: ottsinawa. Here are included a half-brother, a cousin, and two second cousins. The estimated ages are: 5, 45; 37, 35; 7, 35; 18, 45.

OKKYA-NAWA.

Reciprocal with ottsi, ottsinawa, is okkya, collective okkyanawa, denoting any sister of any brother. This is nothing but the common word for old woman, okkya, also okkya-tsi, okkya-tsi-kyi, okkya-Lacci. As a pseudo-designation of kinship it is perhaps not entirely restricted to sisters.

7 addresses 5, his older maternal half-sister, as kyawwu; he refers to her either as kyawwu or as okkya.

7 refers to 37, his mother's younger sister's daughter, of about the same age as himself, as okkya.

He speaks of 5 and 37 as his okkyanawa.

He also may speak of his mother, 3, as okkyatsi, "the old lady."

11, age 13, is the okkya of 12, Chipai'u an okkya.

LACCI-NAWA.

Lacci is an old man: Lacci-nawa are one's "old folks." One would not think of addressing his elders thus; but one sometimes designates them so.

7 and his wife 35 would include under Lacci-nawa 1, the father of 7; 3, the mother of 7; 27, her younger brother; 34, her youngest brother; and, as occasion required, other senior relatives.

IANNIKYINNA, HAMME.

The Zuñi say: —

hom iannikyinawe, all my relatives

ho'nawan iannikyinna, we are blood kin

ho'nawan hamme, we are of the same clan

Annikiyi is a verb meaning "to address by a term of relationship"; *i-*, a reflexive and reciprocal prefix. When a Zuñi wishes to specify a blood relative as opposed to a co-member of his clan, he employs this particular term; but he will refer to his clan mates by designations of relationship exactly as he refers to his blood kin. It is a curious linguistic contradiction.

Similarly, when a Zuñi is asked the meaning of *hamme*, he does not

answer "alike," as we should expect, but "another." The denotation of the word seems to be "another one of the same kind."

HUSBAND AND WIFE TERMS.

Oyye is wife and oyyemci husband. These are however explanatory or descriptive terms. A Zuñi woman appears to call her spouse "oyyemci" to his face as rarely as an American wife addresses her mate as "husband." Occasionally husband and wife will call each other okkyatsi or okkyatsikyi, old woman, and Laccikyi, old man, especially if their first child has not yet been born. In conformity with the prevalent teknonymic practices of the Zuñi, the universal form of address, and apparently of reference also, after the birth of a child is: an tsitta, its mother, and an tattcu, its father; and the house mates know the couple by the same term. One informant, asked how a childless husband addressed his wife, replied that he "does not call her anything."

CEREMONIAL KINSHIP TERMS.

Mrs. Stevenson¹ mentions several kinship terms uttered reciprocally by the recipient and the donor of prayer plumes at a certain point of the winter solstice ceremonies. Informants stated that this usage appertained to the kokko, that is, the gods or the dancers impersonating them, in other words, that it was ritualistic. I found that many old men were wont to say tallemo when a gift of tobacco was made to them even on a profane occasion, and to expect the answer tattcumo. The suffix -mo seems regular under the circumstances. These ritualistic and semi-ceremonial terms are of interest because they comprise several that do not occur in ordinary life, or are used then with different meaning. The following information was recorded on the terms cited by Mrs. Stevenson.

"tā'chumo, father": tattcu, father.

"tālemo, father's brother's son": in ordinary usage, talle is brother's son, a woman speaking; ceremonially, tallemo is the reciprocal of tattcumo. This probable original significance of this word has been discussed under talakyi.

"papamo, older brother": pappa, older brother.

"suemo, younger brother": suwe, younger brother of a man.

"kākiamo, mother's elder brother": kyakkya, mother's brother, older or younger.

"kāsimmo, mother's younger brother": kyasse, sister's son or daughter, man speaking.

¹ Bur. Amer. Ethn., Ann. Rep. xxiii, 132, 1904.

"nanamo, grandfather": nanna, grandfather.

"toshlimo, grandson": ceremonial, tocle-mo.

"ällimo, greatgrandfather": ceremonial, alle-mo.

"uwaikiämi, greatgrandson": ceremonial uwakya-mo.

The last three terms have only a ceremonial usage. Two of them contain the same ending as ta-lle. Several of Mrs. Stevenson's definitions do not agree with the usual meanings of the terms. The nature of the differences is such that her variants seem more likely to be inaccuracies than distinctive ritualistic usages, but a religious survival of ancient denotations is possible.

The following is an instance of ceremonial employment of kinship terms apart from the presentation of gifts. Lamicio, age about 40, is of Pikchikwe clan, child of the Badger clan. He is on terms of close friendship with the present governor. There appears to be no kinship between them; but Lamicio's father is a clan mate of the governor's father, and a remote consanguinity may possibly still be traced. Lamicio manifested an interest in the governor's son Chipai'u, now eleven years old. They washed each other's heads and gave each other presents. This made them pappa and suwe, older and younger brother; and Lamicio was also the boy's kihhe. When Chipai'u was to be made ko-tikkyilli, a member of the Zuñi tribal religious organization or ko-tikkyanne, native custom required adaptation; for this provides that the initiate "must join the ki'wi'sinë (kiva, estufa) of the husband of the doctress who receives him at his nativity,"¹ and Chipai'u had been brought into the world by the government physician. Choice of a godfather was accordingly necessary; and Lamicio was selected. This made him tattcu, father, to Chipai'u.

Lamicio's mother being dead, he lives at his father's house; at least this was the reason given. In this house lives also an older man, Wallella, who is married to Lamicio's kukku, his father's sister. This kukku assisted Lamicio in his initiation of Chipai'u into the ko-tikkyanne; therefore her husband Wallella is Chipai'u's nanna, grandfather, or tattcu, father; he seems to call him both.

ABBREVIATIONS.

A number of the kinship terms for elders are often abbreviated, or more exactly, altered, in the mouths of children by the substitution of -mme for the final syllable. Thus namme, womme, kumme, tamme, for nanna, wowwo, kukku, tattcu. These forms are considered familiar, if not dis-

¹ *Ibid.*, 65. I was told that there is often rivalry among the several midwives present to touch the child first, each wishing to secure the future initiate for her husband and his kiwitsinne.

respectful; for I was told that old people did not like to be called by them, at least in public. But this feeling is not universal, and the clipped terms are even used by elders toward children. Number 12 in the genealogical table, for instance, is sometimes addressed as *namme* by certain old men when they meet him in the town; 13 also calls 1 *namme* instead of *nanna* without protest; and his mother 35 was heard addressing the old man by the same term in calling him to come to eat. This is exactly like an American mother speaking to her father-in-law as "grandpa."

TEKNONYMY.

The commonest way of designating people among the Zuñi, either in reference or address, is to state their relationship to a younger person. As one informant put it, "the child always comes first." Thus 1 is commonly known either as Luis an *tattu* or Bili an *nanna*, father of 7 or grandfather of 13. Often this leads to a non-usage of the term denoting the immediate relationship between the speaker and the person in question; for instance between husband and wife, as mentioned above. The basis of the practice, however, seems to be a very strong inclination to avoid using a person's name. A child's name, which has no religious participation, and at present preferably his American name, are used more freely. Even for adults the Zuñi employ their American or Spanish names, when they have them, and so far as they can pronounce the sounds: these designations are conveniences, but they are not real names to the native. A Zuñi name is far too intimately personal and sacred a thing to be bandied about. It is less a label than a part of the man, which one no more thinks of handling without specific reason — at least to his knowledge — than his body or his private god mask.

When 7 and 35 were first married, 1 and 3, the parents of 7, called him *aktsekyi*, boy, and her *kyattsekyi*, girl, that is, son and daughter. The couple addressed 7's older and childless sisters as *kyawwu*. As soon as 11, the oldest child of 7 and 35 was born, 1, 3, and 5 all spoke to and of 7, their son and brother, as an *tattu*, her father, *i. e.*, the baby girl's father. 35 similarly became an *tsitta*, her mother, and 5 an *kukku*, her father's sister. This terminology continues to the present day, though with the birth of subsequent children the implied reference may be to younger brothers of 11. The appellations are used both in reference, and vocatively: 35 and 7 habitually address each other as an *tattu* and an *tsitta*. 35 in speaking to 1, her father-in-law, refers to her husband 7 as (Bili) an *tattu*, (Billy's) father.

A newly married childless man calls his wife an *tsitta*, 'its mother,' referring to her sister's child in the same house: literally, "(her sister's child) its maternal aunt." If his wife has no married sister or sister's child, but has younger brothers or sisters,

the husband speaks of her as an *kyawwu* or *awan kyawwu*, "his (or her or their) older sister."

5, who is childless, lives with her husband in the latter's natal home, though this is contrary to *Zuñi* custom. The inmates of the house call her *awan tsillu*, 'their mother's younger sister,' referring to the children of her husband's sister, to whom the husband of course is *kyakkya*. When the couple come to the house of 7, the younger half-brother of 5, the husband calls his wife *awan kukku*, 'their father's sister,' with reference to the children of 7.

KINSHIP TERMS AMONG CLAN MEMBERS.

The *Zuñi* apply kinship terms to all clan mates. But true blood relationship and clan relationship are never confused in the native mind, however confusing the identity of terminology may appear to us. Ministers of religion and of social reform among ourselves have a habit of dealing widely in words like 'brother' and 'sister' without even making us think of kinship. The *Zuñi* state of mind appears to be very similar. One knows perfectly well who is one's blood relative and who is not. The definiteness of that knowledge in fact is what makes the wider use of the terms possible without inconvenience. A small child knows nothing of clans or his own clan affiliations; but he knows the grandfather who takes him up to play, and the man or men in the house, or constantly visiting in the house, whom he calls *kyakkya*. Later, he comes to call other men, with whom he is but little in touch, *kyakkya* also; and in time he learns that the former are his *iannikynnawe* or kin and the latter his *hamme* or members of something called his *annota* or clan. By the time he is grown, there is no possibility of uncertainty or error. Each individual's personal status with relation to oneself is clear and fixed, and it matters very little what any and all of them are called. The case is very much like that of the occasional American who addresses his wife as 'mother' or 'sister' or 'sis': it is exactly because she is his wife that he can afford to call her sister. That he speaks to her as 'sister' and not as 'uncle' has undoubtedly a good psychological reason. It is the way the human mind works, or we might better say, the human mind expressed in its social channel language; but there is no institutional factor connected with marriage or descent, that determines the choice of 'mother' or 'sister.' I cannot see anything else in the *Zuñi* application of kinship terms to clan members.

I realize that this is not the interpretation commonly put on phenomena of this kind in many ethnological quarters. But it seems the only reasonable and unconstrained interpretation of the *Zuñi* facts; and I believe it to be the wisest explanation for facts of a similar nature in general, until

something develops, in each particular case, that may demand revision of opinion.

If Zuñi kinship terminology originated in the clans and were only secondarily applied to blood relatives, it would have to be assumed that the religious fraternity was also older than the family: for every member of one's fraternity is a brother, a father, or a son; or, if a woman, a corresponding female "relative." If, on the other hand, kinship terms in the fraternity are secondary, it becomes exceedingly difficult to see why the clan terminology should not also be mere subsequent applications extended from the blood kindred. The only reason for not accepting the alternative would be the demonstrable fact, or the conviction, that the clan was more fundamental, and therefore presumably earlier, than the family. For Zuñi this fundamentality appears out of question: family life is too intense and its manifestations too ever present, clan functions too remote and vague, to make even a theory of clan priority tenable. As to other clan infested nations, I cannot, in the lack of personal experience with them, rid myself of the conviction that conditions among them must often, perhaps generally, be similar; and that the reason the clan has so frequently been accorded precedence, in the works descriptive of such peoples, is only that authors so preferred. The motive of the preference may have been fondness of the marvelous: a person who takes his cousin to be his brother, or in other words can have no brother as we know the term, but on the other hand has an unlimited number of mothers, is as much superior, for purposes of sensation, to the tamer individual who goes through life with two or three brothers and one commonplace mother, as a two-headed calf is to the ordinary one. There is something inherently fascinating as well as shocking in uncertain paternity, group marriage, and promiscuity, one or the other of which, if not all three, seem always to be at the back of the mind — or often just below the surface — of those who see clans and similar social groups as fundamental in primitive society. It is painful to renounce once and for always the emotional stirrings which these ideas, with their touch of the strange and forbidden, evoke. And finally, ever since the disastrous misapplication of Darwinism to human society, it has given untold and easily earned satisfaction to many to believe that a Zuñi or an Arunta is nearer to the chimpanzee in his thoughts and practices than he is to ourselves.

An older Zuñi woman of one's clan is a mother, an older man a *kyakkya*; to a woman of middle age, all her clan mates a generation younger are her children, to a man, his *kyasse*. But an exactly parallel condition holds for the father's clan: all the older men are fathers, the women *kukku*; and the men call their juniors, their clan brothers' offspring, children. What the

women call their clan brothers' children, is not so clear. According to rule, it should be *talle* and *eyye*. Perhaps it is; but I have not heard these two terms so used — which fact may reflect only my ignorance or be an outgrowth of the reluctance with which the words are employed for blood kin. I suspect that the women habitually accord with their brothers in calling their clan brothers' progeny simply children.

Individual 7, Crane clan of Badger father, spoke of Corn house number 40 on Map 1 as containing an old man "*hom kyakkya k'oloktakwe*," "my mother's brother Crane person." Houses 94 and 95 he referred to as *temLa tonnacikwe*, *hom akukku*, "all Badger people, my father's sisters"; and houses 387, 384, 378 as *ha'i hom kukku*, "three my father's sister."

In Table 7 are listed the appellations which the informant, number 1 therein, extends to most the adult members of his clan, Coyote. As he is about forty years old, the number of grandparent and grandchild designations is small, and the bulk of his clan mates are *kyakkya* and various kinds of mother — mother, little mother, and old mother — if senior; older and younger brother and sister when about co-eval; and *kyasse* if junior. It is notable that *hacci* and *tsillu* were not mentioned, being replaced by variations of *tsitta*.

The inconsistency of the Zuñi in the application of their kinship terms to their actual relatives has been several times commented upon. It is no wonder that clan mates are labelled even more randomly. A few examples from table 7 illustrate: —

1 > 26 *kyasse*, sister's child; > 28, mother of 26, *tsitta-ts'anna*, little mother.

1 > 48 *tsitta-lacci*, old mother; > 29, son of 48, *kyasse*, sister's child; > the wife of 29 *ikyinna*, younger sister. This last woman is of course neither blood nor clan kin of the speaker.

1 > 46 *kyakkya*, mother's brother; > 19, younger sister of 46, *kyawwu*, older sister; > 47, younger sister of 46 and 19, *kyasse*, sister's child: that is, three actual brothers and sisters are addressed by terms referring to three successive generations of kindred.

PRINCIPLES.

DESCENT AND GENERATION.

Every Zuñi kinship term denoting a lineal relative is also used freely for collateral kindred. Terms purely of collateral denotation are confined to the uncle-nephew class, and besides the rather uncommon *hacci* and *tsillu*, which are partial synonyms of *tsitta*, they number only five: those for father's sister, mother's brother, and their reciprocals. Even these words,

however, are also applied to relatives that are collateral in a more remote degree.

It is unnecessary to reopen at length in this connection the question whether the narrower lineal or the wider collateral significations of the kinship terms are primary or more original. The answer given seems to depend in nearly every case upon a basic, usually unconscious, and often emotionally stained attitude of mind. As to the phenomena, there is in most cases fair agreement. Those who like to recognize in uncivilized nations mental operations intrinsically distinct from our own, and to feel their civilizations as of another order than ours, will interpret such facts as are here presented as evidence of the historical and psychological primacy of a larger group than the blood family. Those to whom the differences between cultures have significance only in relation to their common tendencies, and who view the abnormal only in the light of a departure from the normal, will distinguish in the kinship systems of the Zuñi the foundation of our own, applied and ramified in many interestingly peculiar ways. However far the author may be from converting to his opinion those who proceed from another premise because they are actuated by different impulses, he hopes that he has made clear in this work his underlying attitude and has adhered to it consistently.

From this point of view the Zuñi must be characterized as indifferent to the specification of the factor of dimension in kinship. They are heartless toward every consideration of whether relatives lie far on the side or come in the one biological line. Compared with us, they are utterly slovenly in this point.

They reveal precisely the same mental habit toward the important factor of succession of generations. Every kinship term known to them is applied freely to persons of distinct generations. If it is true that the father and the uncle, or the brother and the cousin, are called the same because they are or once were substantially one in the scheme of Zuñi life, we should have to conclude also that this scheme of life was or had been so organized that the grandfather was one with the greatgrandfather, the uncle with the brother, the nephew with the grandson, and so further without limit, not to speak of all blood kin being affinities by marriage and all affinities by marriage also blood kin. If it is legitimate to interpret fragments of kinship systems in accord with general principles, it is also legitimate to interpret the totality of such systems, which in actuality occur as units, according to the same suppositions. As soon as the Zuñi system is thus interpreted, both it and the supposition break down into a meaningless chaos.

The fact is, the Zuñi cares remarkably little for system or theory. He is an opportunist. He has the broad, vague outlines of his kinship system

well in mind; but he is not the least interested in following out basic principles into consistent detail. He knows perfectly well that nanna comprises his grandfathers and all his male relatives two or more generations older than himself; but this principle of nomenclature does not for a moment deter him from calling one of his nanna who is visibly younger than the majority, his father. In fact, consistent adherence to system can scarcely be expected in any point from a people who are perfectly content to call the same individual their father and their brother,¹ or among whom both mother and son call the same woman mother.² The Zuñi rule is one of thumb. The result is far from a finished job; but it suffices for the Zuñi, whose primary impulse is to have some designation of kinship for everyone possible, but who normally are far more interested in the person as such, and in his actual status toward themselves, than in the logical consistency or exactness of his designation.

It accords with this looseness of the Zuñi system, that all of their kinship terms in their narrowest or primary sense denote relatives not over two steps of relationship distant. Because of the biological foundation of kinship, it must have in fact, whether or not this is recognized in nomenclature, the vertical dimension of generations and the horizontal one of descent. If we count these two factors as equivalent, a father and a brother are each removed a step, a grandfather and an uncle each two steps, a greatgrandfather, a cousin, and a grandnephew each three equal steps. All considerations of sex and absolute age are independent of this framework and can be separately entered into it in a variety of manners and degrees.

By this scale, there is not even one three-step designation in the Zuñi system of nomenclature. One and two step terms are applied to kindred eight and nine degrees distant. Evidently, fine discriminations are not what the Zuñi is trying to express.

¹ *Ante*, 11 > 32, 52 > 7, 111's father > 13's father; see also "Ceremonial Kinship Terms"; not to forget what has been said about inconsistency under "Kinship Terms among Clan Members."

² *Ante*, 3 > 19, 7 > 19.—A few incidents illustrate significantly. 5, the daughter of 3 and niece or kyasse of 34, died in 1916. Shortly afterward I met 34, and asked after his "kyawwu," meaning 3, who is his full older sister and in whose house he lives. He replied: "hom ikyinna? accekyä," as much as to say: "You mean my *younger* sister? Don't you know that she has gone away (died)?" It proved that he habitually spoke of his older sister, 3, as his mother, of her daughter, 5, as his younger sister, and of his brother-in-law, 1, as his father. Only 27 remained as 34's older brother. All I can say is that 1 and 3 were in a sense the father and mother of the house. Not long after, when I presented an American visitor in this home, I made the introductions, which were on the basis of relationship, in exactly corresponding terminology. 7 once mentioned that a certain woman, who stands outside the genealogy recorded, was younger sister of a certain man. She had previously been described to me as his kyasse, or niece. Fearing confusion, I called attention to the discrepancy. *Hinina*, "the same thing," my informant replied, not evasively as if minimizing a palpable error, but with a touch of the impatience justified in a man hindered in his progress by a mere technicality.

AFFINITY.

In a measure, the same rough and ready but practical tendency may be seen in what is perhaps the most outstanding peculiarity of the Zuñi system: the complete lack, except for two generic terms, of all proper designations for relatives by marriage. The Zuñi proceeds in his nomenclature on the implied assumption that husband and wife are not only one flesh but one person — an assumption, by the way, which can no more be founded upon custom than upon physical fact, and which must therefore reflect merely a social attitude. To us, and to most nations, the father-in-law is two degrees removed. The Zuñi, in calling him father, treat him as a one-step relative. In view of the fact that the living customs of the Zuñi emphasize the unilaterality of their mode of reckoning descent, not to mention their having clans, this merging of affinities into blood kindred is remarkable. It results in calling by the same term persons who, like the mother and the mother-in-law, must by inviolable sentiment as well as unvarying practice be of different clan.

It is tempting to connect this method of nomenclature based on the assumed oneness of husband and wife, with the Zuñi type of marriage, which, however temporary and informal, is as essentially and necessarily a monogamous institution, in the feeling of the people, as among any Christian nation. In view of the obvious preëminence of the woman, who receives her husband into her and her mother's home, and who, with her sisters and female ancestors, owns the house, it is also worthy of note that she and her children recognize her husband's relatives as their kin as fully as he adopts hers. In this point, as in most others, the relationship terms of the Zuñi are so far from reflecting the alleged matriarchal habits of the Pueblo Indians, that they could be used just as well by ourselves or by a people with even more decidedly patrilineal customs.

SEX.

Sex enters into kinship denomination in three manifestations: the sex of the person in question; of the speaker or ego; and, in terms implying two or more steps, of the connecting relative or relatives. The expression of these three factors is quite unequal in Zuñi.

The sex of the individual referred to is specified in all ¹ Zuñi kinship terms except two: *hanni* and *kyasse*, both denoting juniors.

¹ Generic terms like *talakyi*, *ulani*, *otsti*, are not included here or elsewhere in this discussion: neither are the non-vocative terms for husband and wife; nor terms confined to ceremonial usage. The terms referred to are the first eighteen of those listed and treated above.

The sex of the speaker is implied only in six terms: the three for younger brother or sister, and the three specific terms of the nephew and niece class. These of course all refer to juniors.

The sex of the intermediate relative is distinguished in all but one of the ten — or if *inniha*, stepmother be so reckoned, eleven — two-step terms in which alone this factor is capable of entering. The lone exception is *nanna*, grandfather or grandson. *Hotta* specifies connecting sex when it denotes the maternal grandmother, not always when it refers to the granddaughter.

AGE.

Absolute age has already been mentioned as one of the chief influences disturbing the regularity of the Zuñi scheme of kinship as it is applied to actual persons. Age however can enter into the theory of kinship system also as an avowed element, people of the same generation being distinguished as older or younger in sequence of birth. The Zuñi system admits this factor in all five of its denominations for brother and sister; but in no others, except the supernumerary *hacci* and *tsillu* which may be used instead of wider meaning *tsitta* for mother's sister. The suffixes *-lacci* and *-ts'anna*, "old" and "small," are however freely added to any and all terms, and often bring out seniority or juniority within the limits of one generation.

RECIPROCAL EXPRESSION.

Considerable attention has of late years been bestowed upon the manifestations of the reciprocating impulse in American systems of relationship. The tendency takes several forms, which it is well to distinguish.

What may be termed conceptual reciprocity is an exact accord in range of inverted meaning of the terms for two relationships. Complete conceptual reciprocity exists only when all persons called by one term call all those who thus name them, and no others, by the reciprocal term. It is immaterial whether the second term is identical with, similar to, or entirely different from the first.

Verbal reciprocity consists of the use of the same or a derivative term for the corresponding relative; it does not imply exact inverse meaning for the two terms, though this may occur.

Complete conceptual reciprocity without verbal similarity obtains between Papago *sis*, older brother or sister, and *cühpi'tc*, younger brother or sister. The conceptual reciprocity is just as thorough, and the verbal correlation approximate though not entire, in Zuñi, *kyakkya*, mother's

brother, and *kyasse*, man's sister's child. Both conceptual and verbal reciprocity are exact in Uintah Ute *aitcin*¹, which denotes both the father's younger brother, and a man's older brother's child.¹ In *Zuñi nanna*, grandfather and grandson, the verbal reciprocity is complete, but the logical correlation partial; since the girl whom the grandfather calls *hotta*, also calls him *nanna*; and *wowwo* and *hotta*, the grandmothers, join the grandfather in calling the grandson *nanna*. The distinction may seem a fine spun one, since the whole matter is foreign to our usual thought. Thus English has only one term, *cousin*, which is reciprocal; and in this both verbal and logical reciprocity are complete. But in many Indian languages the reciprocal impulse becomes exceedingly important.

There is only one pair of conceptually reciprocal terms in *Zuñi*, the *kyakkya* and *kyasse* mentioned. There is an approach to such reciprocity in the fact that *talle*, woman's brother's son, and *eyye*, woman's brother's daughter, taken together, correspond inversely with *kukku*, father's sister. The generic terms *talakyi* and *ulani* are each self-reciprocal; but they are hardly terms of relationship in the strict sense. The words for husband and wife are also excluded from the reckoning, for obvious reasons.

Verbal reciprocity is equally limited. Beyond *talakyi* and *ulani*, it occurs, but without exact logical correspondence, only in *nanna*, *hotta*, and *wowwo*, all of the grandparent-grandchild class; and, incompletely, in *kyakkya* and *kyasse*.

The distinct failure of reciprocity to operate heavily in *Zuñi* is marked in the fact that persons designated as children name those who so call them by the five different terms *tatteu*, *tsitta*, *hacci*, *tsillu*, and *inniha*; by the term *wowwo*, which still further diminishes the incomplete verbal self-reciprocity of *hotta*; and by the circumstance that there is not a single instance of either kind of reciprocity in the favorable brother-sister class.

This weakness of the reciprocal impulse in *Zuñi* is apparently connected with a feature in which the system stands apart from many American Indian kinship schemes: the almost constant designation of the sex of the relative, and comparatively rare specification of the sex of the speaker. When there is exact conceptual reciprocity, one of the pair of corresponding terms, or one meaning of the single two-sided term, must normally express one of these two categories, the second the other category. Starting with a term like *kyakkya*, mother's brother, for instance, which denotes the sex of the person designated but leaves that of the user of the term indefinite — a term in accord with the principles dominating the English system — we are confronted with two alternatives. We can either adhere to the factors

¹ E. Sapir, *American Anthropologist*, n. s. xv, 135, 1913.

or categories involved in *kyakkya*, and employ one term used jointly by the mother's brother and sister for her son, and another used jointly by them for her daughter, in which case there is consistency of method but no reciprocity; or we can follow the frequent Indian plan of reversing the method and ignoring the sex of the relative referred to but specifying that of the speaker; in which event a satisfactory reciprocity is attained, but consistency is abandoned. It will require a comparative analysis of a considerable number of Indian systems to prove the actual causal relation between reciprocal impulse and variability of the categories involved; but since at least many native American systems evince extensive reciprocity and high fluidity of categories, whereas European systems have little reciprocity and much consistency, it is probable that the phenomena are connected historically as well as potentially. In fact, it is possible that the difference in consistency of employment of categories, which appears to give a truer description of the distinction between civilized and uncivilized systems of relationship than the customary concepts of "classificatory" and "non-classificatory" or "descriptive," may be to a very important extent the result of the operation among Indians and other natives, and the absence among Europeans, of the impulse toward reciprocal and analogous expressions.

At any rate, the Zuñi, a matrilinear and clan people, approximate much more nearly to the English scheme, as regards reciprocity and consistency in the use of categories, than for instance the majority of the California Indians, who resemble us in being non-exogamous and reckoning descent bilaterally or paternally.

EUROPEAN INFLUENCE.

It may be queried whether this condition is not the result of Spanish influence upon Zuñi customs. This is a point on which historical knowledge must give the final determination; and this knowledge no one at present has. But I am confident that Spanish contact has not been an important influence on Zuñi kinship, and I incline to believe that it has not been an influence at all. The house life and house ownership, the economic status, the matrilinear reckoning, the clan organization and functions, the type of marriage and divorce, among the Zuñi, are all in direct conflict with both the theory and the practice of the corresponding Spanish, Mexican, English, and Catholic institutions, and yet maintain themselves unimpaired today. The universality with which terms denoting kindred of intimate consanguinity are applied also to remote collateral relatives; the endless

use of kinship terms for persons standing in non-consanguineal relations of ceremony, clan, temporary co-residence, or personal contact, and that irrespective of race; and finally the thorough confusion in which a school-bred Zuñi finds himself in trying to designate his relatives by English terms, which rest on the same foundation as the Spanish ones; all these considerations drawn from the use of the kinship terms themselves, leave only the slightest room, if any, for the supposition of an alteration of the purely native Zuñi system into something bastard through the influence of encroaching European civilization.

BASIC RECIPROCITY.

There is another, deeper, though vaguer kind of reciprocity recognizable than the conceptual, verbal, or combined forms already discussed. This may not be at all distinctively Zuñian; it may even be worldwide in substantially the same degree, and nothing but the undeveloped common root from which the specific types of reciprocity spring. But it inheres in the Zuñi use of their kinship scheme and should be mentioned. It is revealed in the fact that so far as generation, descent, and age are concerned, a Zuñi always applies to a given person only a term which corresponds in these points to the term which that person applies to him. If a Zuñi calls you grandson, you do not call him father; if you are his father, he is never your nephew; if a woman is one's younger sister, one is not her younger brother, nor her uncle. I say again, this may seem perfectly obvious. It is obvious in the light of our coherent, businesslike English system. But such consistency, elementary as it is, need not be present in so loose-jointed and slovenly a system as the Zuñi one is in its application. With a people whose mental susceptibilities are not jarred when a person calls a woman sister and her brother uncle, among whom a mother and her son are both "children" to the same individual, and with whom it happens that X is both "father" and "elder brother" to Y, it might theoretically be possible for A to call B his sister and for B to call him her mother's brother. But that is precisely where the Zuñi draw the line. And the fundamental feeling for reciprocity which they thereby evince, whether it be a universal or only a frequent one among the nations of the world, appears to be the basis of the more special and systematic phases of reciprocity which they have developed only moderately and other members of their race more intensely.

The only exceptions noted to the unanimous observance of this generalized reciprocity, are two, and it is possible that these rest on misunder-

standing of the cases. 15 calls 37 hotta, granddaughter; 37 calls 15 hacci, mother's oldest sister. 30 calls 1 pappa; older brother, probably on account of common clan membership; 1 calls 30 kyasse, sister's child: she is no blood kin of his, but his wife's father's younger sister. It may be added that 1 calls the husband of 5 talakyi, son-in-law, and is called tattcu by him; but this is only an apparent exception, as talakyi is essentially a generic term and tattcu a specific and vocative one.

ASYMMETRY.

Zuñi indifference to exactness and balance of system leads to a marked asymmetry in most of the groups of kinship designations. There are eight kinds of brothers and sisters possible. Few nations possess eight terms; but two or four are common, according to the factors stressed. The Zuñi have five. Everyone has four grandparents, and one, two, four, or eight terms would be logically consistent. The Zuñi have three. They have three of the nephew-niece type: a woman distinguishes her brother's children according to sex, a man calls his sister's son and daughter by the same word. There are four specific uncle-aunt designations in Zuñi — three on the mother's side, one on the father's. There is a word for step-mother, none for stepfather. There are terms for father and mother, none for son or daughter. The granddaughter is addressed in one way by her father's mother, in another by her mother's mother and her grandfathers; the grandson is called the same by all four of his grandparents. These instances conveniently summarize the unsystematic quality of Zuñi kinship nomenclature which has been commented on in detail in the preceding pages.

KERESAN KINSHIP.

Morgan in his famous *Systems* gives a schedule of the Laguna terms of relationship. These were collected by Rev. Samuel Gorman in 1860.¹ I secured brief lists from an Acoma man at the San Francisco Exposition of 1915, and from a Lagúna woman at Zuñi. The conditions surrounding the latter informant were not such as to favor a satisfactory elucidation. Deficiencies in the Acoma list are due rather to my own lack of time. As the languages of the two pueblos are identical, or practically so, I present the data from all three sources in one list, so far as they reconcile.

¹ Smithsonian Contributions to Knowledge, xvii, 1871, see number 74 on pages 293 to 382.

ACOMA-LAGUNA SYSTEM.

naictiya	father; father's brother; father-in-law; (man's) father's sister's son
naya	mother; mother's sister; mother-in-law; (man's) father's sister's daughter
amünty	son; parallel nephew; son-in-law; parallel cousin's son
makü	daughter; parallel niece; daughter-in-law; parallel cousin's daughter
tumüa	(o?y?) brother of a man
(a)kwi	(o?y?) sister of a man
(a)wa	(o?) brother of a woman
am	(o?y?) sister of a woman
ka'au	(o?v?) sister of a woman
nawi	mother's brother; also reciprocal, probably exact, i. e., man's sister's child
kuya	father's sister; also reciprocal, probably exact, i. e., woman's brother's child
nana	grandfather; also reciprocal, perhaps grandson, perhaps man's grandchild
papa	grandmother: also reciprocal, perhaps granddaughter, perhaps woman's grandchild
(s)atü	husband
(s)au'kwi	wife
kuwa	parent-in-law ("father" and "mother" also employed)
awa	child-in-law (cf. woman's brother, above; "son" and "daughter" also employed)
piye	relative-in-law

The brother-sister terms are different in the three series which are here combined. The only wholly self consistent source is the Acoma informant, who discriminated according to the sex of the speaker, but denied any distinction between older and younger. As the former feature is not found in Spanish, it must be accepted as genuine Keresan, as it is also Zuñi. The expression of relative age, on the other hand, occurs among the Tewa of Hano and the Rio Grande, in the Isleta, Taos, and Jemez Tanoan dialects, and in Zuñi, besides being so general an institution in America that it can with difficulty be conceived as having been originally lacking. Unless my informant and I misunderstood each other, Spanish usage has therefore effaced native Keresan practice in this point.

The uncle and aunt and nephew and niece terms were given by the Acoma informant as applying to "identical" or "parallel" as well as to "cross" relatives; but he further insisted, and my Laguna authority corroborated, that the terms father, mother, son, and daughter were also employed for both the cross and parallel relationships of this class; in fact, the mother's brother's wife was a mother as much as was the mother's sister, and the mother's brother could be called father, and the father's

brother: uncle. This is not only non-European, but far more extreme than Zuñi. Morgan's table, dating from 1860, classes the father's brother with the father, and his wife with the mother, and reserves the distinctive word for uncle for the mother's brother. This is the Zuñi method; but on the other hand the Rio Grande Tewa denote all uncles by one term and all aunts by one — as we and the Spaniards do. As the remote Tewan Hano follow the Zuñi system (plus an obsolescent distinct term for father's brother), their Rio Grande relatives have very likely simplified their system from its original form to accord with the Castilian one. Whether the Acoma-Laguna of recent generations have done the same, or have hesitatingly wavered between this reduction and the tendency to lump all collateral relatives with lineal, or whether the evidence available is simply inaccurate, further investigation must determine. In any event, so far as the terms *nawi* and *kuya* go, they each have reciprocal significance, probably exact.

Specific husband and wife terms occur in both Laguna sources, but the Acoma informant gave "his (or her or their) father (or mother)" — exactly in accord with the Zuñi custom — and was heard to call his wife *ka-naya*, "her mother." I therefore suspect that the usual practice in both pueblos is identical with that of the Zuñi.

Another fundamental resemblance to Zuñi is the paucity of terms for relatives by marriage. *Kuwa* and *awa*, which occur in two sources, may be, if not entirely modern in meaning, reference terms for parent-in-law and child-in-law; and in address, and within the family, the Zuñi practice of using only father, mother, son, daughter, brother, or sister, may be followed. The term *piye* was given to me as meaning daughter-in-law, man's brother's wife, father-in-law, and occurs in Morgan as denoting a man's father's brother's son's wife, and a man's daughter-in-law. A generic term, perhaps of address, denoting any relative by marriage of the opposite or either sex, seems indicated — like Tewa *ja'a*, and something like Zuñi *talakyi* and *ulani*.

The children of two brothers, and presumably of two sisters, are brothers and sisters; but as between the children of a brother and of a sister, that is, cross cousins, the former are reckoned a generation younger and call the latter father and mother, and are called son and daughter by them. The Tewa of Hano¹ follow the same practice, except that the father's sister's

¹ The Rio Grande Tewa call all male cousins *maë'maë*, which in Hano means mother's brother, and all female cousins *ko'o*, or aunt. The latter term may be conjectured to have meant father's sister originally: compare Hano *ki'u*, father's sister. The modern Rio Grande Tewa terminology thus seems to be a case of making over the meanings of the words for one male and one female collateral relative to accord with the concepts of Spanish *primo* (*hermano*) and *prima*.

daughter is called father's sister, and not mother. The Hopi, according to a statement recently made before the American Ethnological Society by Dr. Lowie, have the Hano usage. Keres, Tewa, and Hopi thus agree in using for cross cousins terms that normally denote a difference of generation; the Zuñi stand apart among the Pueblos with their preference — though not an exclusive one — for brother-sister terminology for cross cousins.

Dr. Lowie has recently shown ¹ — on the basis of the distribution of the phenomena and without hypothetical speculation — that there exists a fairly regular connection, over most of North America, between definitely exogamous institutions and the terminological merging of lineal with collateral relatives. As only Tewa data were accessible to him at the time, he noted the Southwest as the principal area where the correlation, both positive and negative, did not hold. Since then, his determination of the Hopi nomenclature for cross cousins weakens the apparently exceptional status of the Southwest as regards this correlation; and the adhesion of the Keres to the Hopi-Hano principle in this point, strengthens his case still farther; to which may also be added the occasional Zuñi cases of the same type.

Close as the correlation is, it remains to be shown however that it is primary, and not a correlation between one phenomenon and a by-product of another. I should be inclined to connect the use of parent-child terminology for cross cousinship rather with unilaterality of descent than with clan exogamy, holding the latter to be perhaps a common but not necessary development, and an overlying development, of the former. The basic condition thus would be that in which a woman would be felt to be a very different thing from a man in relationship — less perhaps as an existing individual than as a factor in the relations of other people. Once this point of view prevailed, cross cousins would necessarily be felt to be something very different from parallel cousins, and cross uncles and aunts from parallel ones; and the distinction would find expression in nomenclature. On the other hand, the same point of view would tend to result in a greater differentiation of male and female lines of descent, with the probability of the greater weighting of one than of the other; and this differentiated weighting may in itself be the foundation of clan groups and exogamy. It is not a question, therefore, of the correctness of Dr. Lowie's correlation, but of its interpretation. I doubt, and believe it remains for him to prove, that his kinship nomenclature is fundamentally connected with exogamy. The terminology involved accords equally well with a certain mode of viewing

¹ *American Anthropologist*, xvii, 223-239, 1915.

kinship itself, and this mode may as well, for all we know, be at the bottom of exogamy as a side effect of the reckoning of descent. In other words, I refuse to bring in the exogamic clan as a factor at any point until it has been definitely established that the phenomena in question cannot be equally well correlated with and interpreted by the factor of the family of true blood kindred.

In spite of the fragmentary nature of the available Keresan lists, the generic resemblance of Keres to Zuñi and Hano kinship nomenclature is evident. The significant deviations, so far as they may not be mere inaccuracies or misunderstandings of information, seem mainly due to Spanish influence; which has been even more operative among the Rio Grande Tewa. The Pueblo type of kinship system, wherever we know it, has almost no specific terminology for relatives by marriage. It employs kinship terms abundantly for teknonymic purposes. Designations for near relatives, both lineal and collateral, are employed for all blood kindred, however remote, besides being freely applied to clan members, ceremonial associates, friends, and fellow residents. Exact reciprocal expression, both conceptual and verbal, is moderately developed, and the designation of the sex of the relative is more frequent, relatively to that of the sex of the ego, than among many American tribes. In general there is a characteristic asymmetry, loose-jointedness, and indifference to systematic consistency.

ETYMOLOGICAL.

Most if not all Zuñi kinship terms are from monosyllabic stems. The same seems to be true in Tewa and perhaps in Keres. Several Zuñi and Tewa stems of the same meaning prove to be identical or similar in sound.

Zuñi	Hano Tewa
ta-, father	ta-, father
tsi-, mother	yi-, mother ("ji-," j = y)
pa-, older brother	pi-, older brother
kya-, older sister	ka-, older sister
ku-, father's sister	ki-, father's sister

There seems to be no necessity to interpret these resemblances as remnants of an ancient unity of the languages. Several other stems possess similar meanings in all three of the stocks: their significance varies, but they regularly refer to older persons. These cases appear to be due to one language being influenced by others.

	<i>Zuñi</i>	<i>Keresan</i>	<i>Rio Grande Tewa</i>	<i>Hano Tewa</i>
na-na	grandfather (grandson)	grandfather (and reciprocal)		
pa-pa	older brother	grandmother (and reciprocal)	greatgrandfather	greatgrandparent
ku-ku	father's sister	father's sister (and reciprocal)		father's mother (and reciprocal)
-ya				
ta-teu	father		father	father
-ra				
-da				
ka-ka	older sister	woman's (older?) sister		older sister, mother's older sister
-ye				
-'au				
-wwu				

II. THE HOUSE AND MARRIAGE.

I have no information to add to Mrs. Stevenson's truthful description and at some points very full account of the Zuñi customs concerned with the house, marriage, and motherhood, and shall confine myself to emphasizing a few features that seem to be of broader significance.

First, and again, it is in the woman's ownership of the house that the so-called matriarchate of the Zuñi centers and rests. Without this ownership there would be no matriarchate left; even the matrilineal reckoning of descent would reduce to a nominal matter.

The woman's title to the house is absolute. When a building is pulled down, it is the men who do all the heavy work. When it is re-erected, or an entirely new house built outside the old town, the men quarry and lay the stone, cut and lay the roof logs, and carpenter the doors and windows; the woman's part is auxiliary throughout, except for the light labor of plastering, in which she holds sway. Yet when a man has built such a house, and he and his wife quarrel and separate, even though for no other reason than her flagrant infidelity, he walks out and leaves the edifice to her and his successor without the least thought of being deprived of anything that is his. Men have shown me the houses they have put up for a wife who subsequently installed another man as her husband, and have pointed out the glass windows, which they had purchased from the storekeeper with their own earnings, still in place; but the information was given casually, and without implication of injustice being involved. The wife was blamed for her laxity of morals and for the deceit of unfaithfulness before the rupture was consummated, not for her retention of property to which in our eyes the husband would have a claim. The Zuñi does not even have an inkling of having been chivalrous in such an abandonment. His conduct is as much a matter of course as resigning oneself to anything inevitable, like a cloud-burst washing out one's cornfield. It would be interesting to know the civilizational circumstances under which such customs sprang up. Even if the woman formerly built the house, it would remain to be understood how this habit originated, and how the people came to remain conservative in the matter of ownership while the labor of construction shifted to the other sex.¹

¹ That this shift has taken place at Zuñi is highly probable, since at Hopi, at least until recently, the women were the builders. Evidently Zuñi society has remained aboriginal, while the material and economic phases of their life have slowly altered towards conformity with European practices.

A third point is that however "matriarchal" this female ownership of the house may constitute the Zuñi, they are not a woman ruled people. The position of woman is not materially different from that which she occupies in nations of non-matriarchal institutions. As regards government, women claim and have no voice whatever. As regards religion, there are no women priests nor fraternity officers — only associates —; and while women are not excluded from religious activity, their participation is obviously subsidiary. Even within the house, as long as a man is a legitimate inmate thereof, he is master of it and its affairs. There are Zuñi women that control their husbands, sons, or fathers; but they do so only by virtue of inherent force of character; and to the same degree, and with the same frequency relative to the total population, as among other nations.

Finally, the Zuñi are a monogamic people. Divorce, if it may be called such, for it is nothing more than a separation, is as easy as marriage; more facile, in fact, for a young girl still under parental influence. There is much in Zuñi life that our standard code would denounce as loose. Most men and most women of middle age have been married to several partners. Even people of mature age change. The majority of the Zuñi have half-brothers and half-sisters scattered through the town. But however shifting marriages may be, marriage is an affair of one man to one woman. The normal Zuñi no more dreams of practising polygamy, polygyny or polyandry, than does the average American citizen.¹

¹ It is of interest in this connection that according to Mrs. Elsie Clews Parsons the Zuñi affirm that they do not practise the levirate and seem to resent the imputation of the custom. I should have had a conviction that the institution would be repugnant to their feelings.

III. THE CLAN.

PRINCIPAL FEATURES.

The Zuñi clans today number fifteen. The largest clan comprises four hundred or more persons; of the smallest, there remain only three or four people, so that it hovers on the edge of extinction. Marriage in the mother's clan is forbidden; in the father's clan, disapproved but tolerated. Neither phratries nor moieties have any social significance; all such groupings of clans appear to be wholly esoteric and symbolic. Equally devoid of social effect, frequently even of recognition, are certain smaller units into which some large clans are subdivided. The names of these subdivisions however serve to connect the Zuñi clan system with that of the other Pueblos. There is some localization of clans within the town; but it is fragmentary and irregular. There appears to be no central clan house, no recognized head, no meeting or council, nor in fact any organization whatsoever; nor does the clan as such ever act as a body.¹ Neither are the clans associated with the kiwuitsiwe or kivas. They have little connection with the religious societies or fraternities either in name, function, or membership, except in certain special and limited cases. The clans do enter at innumerable points into Zuñi ceremonial; but it is through the requirement that such and such an act of religion must be performed by a person or persons of such and such a clan or father's clan, and not by any participation of the clan as such. There are no totemic taboos, and no worship of the clan totem. Finally, people are reckoned as belonging to the father's clan almost as much as to the mother's.

MARRIAGE REGULATIONS.

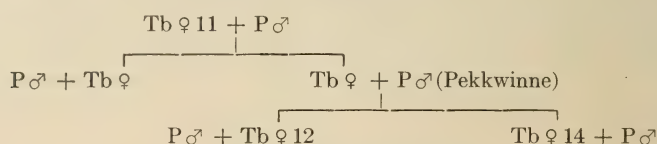
The aversion to marriage into the father's clan is not nearly so strict as into the mother's. There are two cases in the genealogy obtained. Number 3, an old Crane woman, with a Badger father, married a Badger

¹ Mrs. Stevenson (*Bur. Am. Ethn., Ann. Rep. xi, 112, 1894*) speaking of an impoverished family at Sia, says, "Nothing is done for this family by the clan. Close observation leads the writer to believe that the same ties of clanship do not exist with the Sia as with the other tribes. . . . The wife belongs to the Corn clan and has a number of connections. When the writer chided a woman of this clan for not assisting the sufferers she replied: 'I would help them if I could, but we have not enough for ourselves,' a confirmation of the opinion that the clan is here secondary to the nearer ties of consanguinity. The care of one's immediate family is obligatory; it is not so with the clan." It is a fair question whether the conditions here described as peculiar to Sia are in truth exceptional and modern, or normal and of old standing.

man, who was not however a kinsman. Number 105, a Sun man, with a Crane father, once married a Pikchikwe woman whose father was also Crane. This caused talk rather than disapprobation. Like so many Zuñi marriage ventures, this matrimony did not last. The man's more distant relatives were heard joking him about it.

In learning the clan affiliations of houses, and recording clan censuses, I encountered several marriages into the father's clan, both by men and women. Normally the breach was not formally enunciated, but became apparent as information accumulated. It is clear that this violation is not a mere symptom of modern decay of native institutions: conservative old men, and the mothers of women now middle aged, have committed the irregularity. The practice seems to have been in much the same status as the bride's going into her husband's house: both are contrary to formulated custom, and liable to meet ridicule and light reproach, but are and have been in usage in an appreciable percentage of cases. The objection to marriage into one's father's clan is based on the ground that one is marrying *yam tea'le*, "one's own child"; a woman who has married a member of her father's clan, must on certain ceremonial occasions, such as washing the head, behave to her husband as if he were "her child."¹

The Tobacco clan appears to have a particular inclination to marry and remarry with Pikchikwe. Number 1, the informant who gave the census reproduced in table 8, had a Pikchikwe father and has a Pikchikwe wife — who by the way lives in what was originally the house of his people. For the women who have come out of house 72 of map 1, the case is even more extreme — unless my information is badly confused — as the following genealogy shows:



I have encountered one case of two people of the same clan marrying. This union took place between the summer of 1915 and that of 1916. Aisih-tiwa, — a Pikchikwe man out of house x156, but reared since boyhood by the Bear woman and her Zuñi-adopted captive Mexican husband Jesus of house 534 f, — separated from his Sun wife and married a Pikchikwe woman in house 454. This fact came out incidentally to tracing the clan connections of the members of the Ne'wekwe fraternity.² My first informant,

¹ I should have expected the opposite terminology: in this case, the husband is the wife's clan father, and she the child of his clan and therefore by extension his child.

² See table 11.

the director of the Ne'wekwe, mentioned the fact without comment; the governor of Zuñi confirmed it, and the only explanation he or his wife could give was that Aisihtiwa and his new wife had overlooked their being clan mates. Their elders, however, would scarcely have forgotten the circumstance in a normal case; and I am inclined to find considerable abnormality in Aisihtiwa's being brought up away from his natal home or the homes of any of his close kin, in a house the head of which, on account of his alien origin, is not a member of any Zuñi clan. Further, Aisihtiwa is of the Lapiktekwe subdivision of the clan, and his wife of the Mullakwe. This fact may have been a palliation in the native mind. In any event the occurrence is isolated, so far as my knowledge goes.

LIST OF CLANS.

The Zuñi clans have been recorded by several investigators, whose closely according data are collated in the appended table.

It will be seen that my list tallies almost exactly with that of Mrs. Stevenson. All my informants mentioned all sixteen of her clans, and none added any others. It is of interest that none of the informants knew the total number, which must therefore be devoid of significance to the native mind. My principal informant, the governor's father, knew nothing of the extinct clans cited by Mrs. Stevenson, except that he recognized the Kwinikwakwe or Black Corn as a subdivision, and an existing one, of the Corn clan. The one material difference between the data of Cushing and Hodge and those of Mrs. Stevenson and myself is that the former give the Antelope clan as already extinct, but list the Rattlesnake clan as still surviving. The Antelope clan (or really, subdivision of the Deer clan) survives today in the persons of one or two males. As to the Rattlesnake clan, there is some doubt. It seems unlikely that it could have escaped the entire notice of so long a resident and indefatigable a worker as Mrs. Stevenson. She came to Zuñi almost as early as Cushing, and lived there later, so that even if this group had died out soon after the beginning of Cushing's domicile and before the publication of his work, some knowledge of it, at least as a recently extinct body, must have reached her. Further, Cushing¹ gives Chitolakwe not only as the name of a clan but of a fraternity; Mrs. Stevenson, while ignoring the Rattlesnake clan, refers to the Chikialikwe or Rattlesnake society.² My informants all positively denied that there ever was a Rattle-

¹ Bur. Am. Ethn., Ann. Rep., XIII, 371, 1896.

² Ibid., XXIII, 528, 1902.

snake clan or a Rattlesnake society among the Zuñi; and one of them told a myth that accounts for the absence of these bodies among his own people and their presence among the Hopi.

When the Zuñi still lived at Hallonawa, a family went out to get wood, leaving a little boy and girl in the house. The boy kept looking out, but no one returned; and at last he followed his parents. A rattlesnake heard the little girl crying, came, entered, and looked at her. Still no one returned, and he took her with him. When she had lived with him for a time, he said: "Perhaps the people will find and kill us; let us go away." So he took her to A'tahnakwe, a hill to the southwest. But the rattlesnakes who lived there said to the two: "The people might find you here and do us an injury." Then the snake and the girl went to Iccannantekkyapo'a, the semi-circular hillock half a mile south of Zuñi; but the snakes there also would not let them stay, for fear of punishment by human beings. They went on to Tei'pa'na hill, where the snake residents allowed them to remain, and here they lived until the girl was grown up. Then the snakes took her back to Hallonawa, where the visitors were about to establish a fraternity like that of the Hopi. But the Zuñi at Hallonawa killed the woman and some of her associates; and the others said: "Let us go to a country where they are good to us." So her offspring and their rattlesnake kin went to the Hopi, and the Hopi make the snake dance. But the Zuñi have no rattlesnake clan.

From what is said below of synonyms and subdivisions among Pueblo clans, I should infer that the alleged Zuñi "Sky" clan was an equivalent of Corn or possibly Sun, "Water" certainly of Corn or Frog, "Wood" of Coyote, and "Rabbit" of Tobacco.

MOIETIES AND PHRATRIES.

As regards moieties or a dual grouping, I obtained absolutely no information. All that is on record regarding Zuñi moieties seems to be contained in the versions by Cushing and Mrs. Stevenson of an episode in the Zuñi tribal myth.

The Cushing account ¹ tells how soon after the emergence from the under world Yanauluha carried a staff among the plumes of which appeared four round things, seeds or eggs, two blue like the sky or turquoise, two dun-red like earth. Yanauluha told the people to choose. From one pair would issue beings of beautiful plumage, and where they flew would be everlasting summer; from the other would come evil beings, "uncolored, black, piebald with white," and where these flew, and the people should follow, winter would strive with summer, and food be obtainable only by labor. The people chose the blue eggs, and the strongest seized them. Worms issued from this pair of eggs, which grew into ravens. But the other eggs held by

¹ Bur. Am. Ethn., Ann. Rep. XIII, 384, 1896.

TABLE 2.
Zuñi CLAN LISTS.

Kroeber ¹	Stevenson ¹³	Hodge ¹⁸	Cushing ¹⁹	Cushing ²¹
Pikchikwe, Dogwood (59) ²	Pichikwe, Dogwood	Parrot	M: Pichikwe, Parrot-Macaw	M: Pichikwe or Mulakwe, Parrot or Macaw
Kyakkyalikwe, Eagle (28)	K'ak'alikwe, Eagle	Eagle	U: k'yak'yalikwe, Eagle	U: K'yak'yalikwe, Eagle
Tonnashikwe, Badger (21)	Tonashikwe, Badger	Badger	S: Tonashikwe, Badger	S: Tonashikwe, Badger
Yattokyakwe, Sun (20)	Yatok'akwe, Sun	Sun	U: Yatok'yakwe, Sun	M: Yatok'yakwe, Sun
Tonnakwe, Turkey (20)	Tonakwe, Turkey	Turkey	E: Tonakwe, Turkey	E: Tonakwe, Turkey
Towwakwe, Corn ³ (15)	Towakwe, Corn	Corn	S: T'akwe, Maize-plant	M: T'akwe, Seed or Corn
K'oloktakwe, Sandhill Crane ⁴ (13)	*K'oloktakwe, Sandhill-crane	Crane	N: K'oloktakwe, Crane or Pelican	N: K'oloktakwe, Heron or Crane
Takkyakwe, Frog-Toad ⁵ (11)	Tak'akwe, ¹⁴ Frog	Frog	D: Tak'yakwe, Toad or Frog	D: Tak'yakwe, Toad
Suskikwe, Coyote (10)	Suskikwe, Coyote	Coyote	W: Suskikwe, Coyote	W: Suskikwe, Coyote
Ayyahokwe, Tansy-Mustard ⁷ (7)	Aiyaho'kwe (a plant)	Redtop shrub	W: Aiyakowe, Red-top plant or Spring-herb	S: Aiyahokwe, Redtop-shrub
Annakwe, Tobacco (6)	Ana'kwe, Tobacco	Tobacco	S: Anakwe, Tobacco	U: Anakwe, Tobacco
Anshekwe, ⁶ Bear (5)	Ainshikwe, Bear	Bear	W: Ainshikwe, Bear	N: Aingshikwe, Bear
Shohwitakwe, Deer ⁸ (3)	Shohitakwe, Deer	Deer	E: Shohoitakwe, Deer	E: Shohoitakwe, Deer
Poyyikwe, Chaparral Cock ⁹ (1)	Poyi'kwe, Chaparral-cock	Chaparral Cock	N: Poyikwe, Grouse or Sagecock ²⁰	W: Poyikwe, Chaparral cock or Grouse
Tatluptsikwe, Yellow-wood ¹⁰ (1) ¹¹	Ta'h'lup'sikwe, Yellow-wood ¹⁶	Yellow-wood	N: Ta'h'luptsikwe, Yellow-wood or Evergreen-oak ²⁰	N: Tatluptsikwe, Yellow-wood
(Ma'wikwe, Antelope ¹²) (0) ¹¹	Mawikwe ¹⁶		*E: Maawikwe, Antelope	
		Rattlesnake	D: Chitolakwe, Rattlesnake ²⁰	D: Tchitolakwe, Rattlesnake ²²
	* Apoyakwe, Sky		*U: Apoyakwe, Sky	
	* Tawi, Wood		*D: K'yanakwe, Water	
	* Okshikokwe, Cottontail-rabbit			
	* Kwinikwakwe, Black Corn			

¹ Figures refer to the number of "houses," that is, families, belonging to each clan in Zuñi in 1916.

² My Zuñi informants were unanimous that this clan is named after a shrub or small tree. It does not grow near Zuñi, and I was unable to secure a specimen for determination. Mrs. Stevenson, in a footnote on page 40, says it is *Cornus stolonifera*. In her Ethno-botany, same series, xxx, (86), 1915, she calls it *Sida stolonifera riparia* Rydb. The word positively does not mean Parrot or Macaw. This bird is called mulla, and the Mullakwe or Macaw people are a division of the Pikchikwe. Under the circumstances I adopt Mrs. Stevenson's translation: dogwood.

³ Towwa or toa — I have more frequently heard the latter, but the former seems more consonant with Zuñi phonetics — denotes corn in general.

⁴ I use the exact term on Mrs. Stevenson's authority; the descriptions given me were merely generic for a crane.

⁵ Takky, as Cushing implied, is a generic term for both frogs and toads. The term Frög clan will hereafter be employed.

⁶ Also heard as Ainshekwe (which is contrary to Zuñi phonetic habit), Annishekwe, and Annshikwe. There is an elusive sound somewhere in the word.

⁷ Tansy-mustard, of the genus *Sophia*. In her Ethno-botany, Bur. Am. Ethn., Ann. Rep., xxx, (86), 1915, Mrs. Stevenson gives *Sophia halictorum* Cockerell. The plant is past seed in July, so Cushing's description of "spring herb" is appropriate.

⁸ The Zuñi in their nomenclature classify deer and similar animals quite differently from ourselves. Their descriptions of course are loose to us, as ours are to them, and an exact determination of the meaning of their terms can probably be made only from specimens, or by a student who has biological knowledge as well as ethnological method. The common word for deer, probably generic, is na'le, plural nawe. My translation of Shohwitakwe is based on Cushing's and Mrs. Stevenson's.

⁹ Poyi is the striking looking bird whose four-toed foot and peculiar double-faced track have impressed the mythology of all Pueblo peoples.

¹⁰ *Berberis Fremontii*, according to Mrs. Stevenson. The word means yellow wood in Zuñi, the American vernacular name seems to be the same, and the Mexicans are said to call the shrub palo amarillo. The wood is close-grained, hard, bright yellow, and susceptible of polish.

¹¹ The Yellow-wood clan survives in the persons of about three men and an old woman; of Antelope, there seems to be only one old man left. On the other hand, two old informants,

working independently on the Mindeleff plot of Zuñi, which they dated as belonging to the time when Cushing lived there, each gave me one "house" — that is, family comprising women — for the Antelope sub-clan of that period.

¹² As for Ma'wikwe, I could not determine the species, and give the translation of Cushing and Mrs. Stevenson. This is not really a clan, but a subdivision of the Deer clan, as is shown by the fact that Deer and Antelope may not intermarry; yet in enumerating clans, informants usually mentioned both, as if they were separate. We should say "one clan with two names"; but the Zuñi characteristically put it toppint c'inna, "one name." The c'ohwitta was described as "lokky, brownish, and large; the ma'w'l, as yellowish, of the size of a donkey, and with an antler that is single-spiked except for a short prong half way up the front.

¹³ Bur. Am. Ethn., Ann. Rep., xxiii, 292, 1904.

¹⁴ In note b, page 168, of her work, Mrs. Stevenson expresses the conviction that the word takia means toad and not frog.

¹⁵ "Berberis Fremontii Torr."

¹⁶ "One man has been the only member of this clan for the past ten or twelve years."

¹⁷ "This clan became extinct in 1902 by the death of an aged shiwanni." My informants recognized the Kwinikwakwe or Black Corn people as one of the existing subdivisions of the Corn clan, but denied its identity as a clan now or formerly.

¹⁸ Amer. Anthropologist, old series, ix, 345, 1896.

¹⁹ Bur. Am. Ethn., Ann. Rep., xiii, 368, 1895. The clans marked N, W, S, E, U, D, M, "appertain" respectively to the North, West, South, East, Upper or Zenith, Lower or Nadir, and Midmost.

²⁰ "Nearly extinct."

²¹ F. W. Hodge, Handbook of American Indians, Bur. Am. Ethn., Bull. 30, Volume II, 1918, 1910: "According to Cushing the Zuñi have 7 phratral groups, divided into 16 surviving clans." N, W, S, E, U, D, M have the same significance as in the preceding list.

²² John G. Bourke, in Journ. Am. Folk-Lore, iii, 116, 1890, gives the Zuñi gentes as fourteen: Water, Crane, Eagle, Bear, Coyote, Macaw, Corn, Tortoise, Chaparral Cock, Tobacco, Yellow Stick, Sun, Sun Flower, Badger. Tortoise (or Turtle) is evidently a slip for Turkey, Macaw may be equated with Pikchikwe, Water probably with Frog, and Sun Flower with Tansy Mustard. Adding Deer (and Antelope) which are not mentioned, we have the same clans as were recited to Mrs. Stevenson and myself.

* Extinct.

Yanauluha and by the fewer and weaker but wiser people who waited with him, grew into macaws, who flew to the summer land of the south. "As father, yet child of the macaw," Yanauluha "chose as the symbol and name of himself and as father of these his more deliberate children — those who had waited — the macaw and the kindred of the macaw, the Mûla-kwe; whilst those who had chosen the ravens became the Raven-people, or the Kâ'kâ-kwe. Thus first was our nation divided into the People of Winter and the People of Summer." Yanauluha became "speaker to and of the Sun-father," "Pékwi Shiwani Ehkona (and Earliest Priest of the Sun)," that is, the first Pekwin, as Mrs. Stevenson would say. "He and his sisters became also the seed of all priests who pertain to the Midmost clan-line of the priest fathers of the people themselves 'masters of the house of houses,'" in other words, of the highest Zuñi priest, the Kiakwemosi of Mrs. Stevenson, who, together with the Pekwin, must according to her be of the Pikchikwe or Dogwood clan.¹

The Cushing account goes on to tell how "the Twain Beloved² and priest fathers gathered in council for the naming and selection of the man-groups and creature-kinds (*tanawe*), spaces, and things. Thus determined they that the creatures and things of summer and the southern space pertained to the Southern People, or Children of the Producing Earthmother, and those of winter and northern space, to the Winter people, or Children of the Forcing or Quickening Sky-father. Of the Children of Summer, some loved and understood most the sun, hence became the fathers of the Sun people (Yâtok'yakwe). Some loved more the water, and became the Toad people (Tak'ya-kwe), Turtle people (Etâa-kwe), or Frog people (Tak'-yaiuna-kwe), who so much love the water. Others again loved the seeds of earth and became the People of Seed (Tâatem'hlanah-kwe),³ such as those of the First-growing grass (Petâa-kwe, now Aiyaho-kwe) and of the Tobacco (Ana-kwe). Yet still others loved the warmth and became the Fire or Badger⁴ people (Tonashi-kwe). According, then, to their natures and inclinations or their gifts from below or of the Masters of Life, they chose or were chosen for their totems."

"Thus too it was with the People of Winter or the North. They chose, or were chosen and named, according to their resemblances or aptitudes; some as the Bear people (Aishî-kwe), Coyote people (Suski-kwe), or Deer people (Shohoita-kwe); others as the Crane people (Kâlokta-kwe), Turkey people (Tonakwe) or Grouse people (Poyi-kwe)."

Mrs. Stevenson's account⁵ of the corresponding episode runs as follows:—

It was at Häntlîpinkla that the Ashiwi received their clan names, which originated in this way: During their migrations the Ashiwi traveled in groups, so when

¹ The Kiakwemosi may be of another clan if his father is Pikchikwe. *Op. cit.*, 163-168.

² Mrs. Stevenson's "Divine Ones," Kôwwituma and Watsusi (p. 24), not to be confused with the Ahayuta or twin war gods, Uyuyewi and Matsaillema (p. 35), although the two pairs of personages are undoubtedly a mythological duplication of a single concept. It is interesting that a young Zuñi who voluntarily recounted to me an outline of part of the creation or tribal myth, named the war gods in place of the "Divine Ones." It need hardly be added that he was not a priest.

³ This word seems to be from towwa, toa, corn, and temla, all, and to mean something like "all kinds of corn." This would make the meaning that the Corn, Tansy-mustard, and Tobacco clans were connected.

⁴ Producing fire with the drill, which seems to be always a more or less ritualistic action among the Zuñi, is the function of people of the Badger clan.

⁵ P. 40.

the Divine Ones decided that the people should be gathered into clans they addressed each group, saying: 'You will take unto yourself a name?' Of one group he [*sic*] inquired 'What will you choose?' and they answered: 'We are the Pichikwe (Dogwood people).' Another group having been questioned, they replied: We are the Towakwe (Corn people).' Others chose to be the 'Ko'loktakwe (Sandhill Crane people), selecting this bird because it happened at the time to be flying by. Each name was chosen from some object seen at the time, and the totem of each clan was cut on the rocky walls; many of them are to be seen at the present time.

The Pichikwe clan was divided in the following manner: Yāñōwwuluha, pekwin to the Sun Father, placed two eggs in a sacred basket of meal and deposited it on the floor before the ɛttowe of the Ashiwanni and requested all the people of the clan to choose an egg. All chose the beautiful blue egg; none would have the more homely one. But, alas! When the eggs were hatched the raven came from the blue egg and the macaw from the other. Yāñōwwuluha then said to some of the Pichikwe, 'Henceforth you will be the Mula (macaw) Pichikwe.' Others of this clan he called Kākā (raven) Pichikwe. Yāñōwwuluha sent the Mula to Mexico and with it a number of the Mula Pichikwe to look for the Middle place.

Raven and Macaw were frequently referred to by my informants as subdivisions of the Pichikwe clan, while they denied any moieties among their people as a whole. As a reflection of the existing social status, Mrs. Stevenson's version of the creation myth is therefore unquestionably the more correct, and Cushing's is quite misleading.¹ On the other hand, the Zuñi tradition is throughout concerned with the people as a whole, and, in contrast to Hopi legends, scarcely at all with the fortunes of individual clans. Cushing's version is thus much more in consonance with the spirit of the myth, as well as having more point both artistically and symbolically. It is therefore not unlikely that it too rests substantially upon native tradition, which may be oscillating and inconsistent upon this point.

It may be added that Mrs. Stevenson makes no reference to moieties in her description of the ceremonial practices and esoteric beliefs of the Zuñi, among whom this institution must accordingly be regarded as lacking, or substantially so, as compared with the strong emphasis placed upon it in modern native life among the Rio Grande Pueblos.

I also learned nothing of phratries, or clan groupings, which are so prominent at Hopi, and of which Cushing gives the two lists that have been indicated in the foregoing table of clans. As with the moiety, I am convinced that phratries play no part in the social life of the people, so far as marriage, descent, and personal relations are concerned; but that in certain aspects of religion, symbolic groupings of clans are made along the lines indicated by Cushing, though these may possibly be so wholly mental as

¹ I have heard an allusion to a separation of the Pichikwe — not of the nation — which undoubtedly refers to the same myth incident.

scarcely to affect even ritual. The interpretation of the Cushing evidence is considered below in the discussion of the localization of clans in the town.

KERESAN MOIETIES AND MARRIAGE.

I have gone over Frederick Starr's valuable census of Cochiti¹ to ascertain whether there is any evidence of an exogamic moiety or phratral system on the Rio Grande. His list contains reference to 63 marriages, 4 of them within the clan and in violation, of course, of the old law. The other 59 involve marriages between 32 different pairings of clans. There are 11 clans, and therefore only 55 such couplings possible. As the clans are small, from 51 to 4 souls in number, probability would demand a considerable but scattered proportion of possible pairings that were unrepresented by actual marriages. This is precisely the condition found. Consequently the distribution of marriages is just such as might be expected from the figures involved, on the assumption that there were no restrictions on intermarriage between any of the clans.

COCHITI MARRIAGES.

	Cottonwood	Mexican Sage	Ivy	Scrub-oak	Turquoise	Sage	Water	Calabash	Coyote	Maize	Sun	Total
Cottonwood	x	8	2	5	2	—	2	1	1	—	1	22
Mexican Sage		x	—	1	1	1	—	2	2	2	1	18
Ivy			x	2	2	2	—	—	—	—	—	8
Scrub-oak				x	—	—	2	1	2	—	—	13
Turquoise					x	2	1	1	2	—	—	11
Sage						x	—	4	1	1	—	11
Water							x	1	—	1	1	8
Calabash								x	—	—	—	10
Coyote									x	—	1	9
Maize										x	—	4
Sun											x	4

The only clans of any size that show no intermarriage are Cottonwood (22) and Sage (11); Mexican Sage (18) and Ivy (8); Scrub-oak (13), and

¹ Proc. Davenport Acad. Sc., VII, 33-45, 1899.

The clans are arranged in the order of their strength, as per the number of houses assigned to each. The disproportionate number of marriages into which Badger and Crane people entered, is probably due to the circumstance that the half dozen informants used included two Badger and two Crane men.

The general uniformity of distribution of marriage partners is evident. Two small clans are not likely to produce cases of intermarriage until a long series of instances is available.

In the subsequent section on the Pueblo Clan System, evidence is adduced to show that certain Zuñi clans belong to what seem to be units, when comparisons between all pueblos are instituted. Such Pueblo units or phratral groups, or perhaps single clans with double names, are Corn and Frog; Badger and Bear; Tansy Mustard and Chaparral Cock; and perhaps Eagle, Sun, and Turkey. Of these, Zuñi Corn and Frog show no intermarriage in the foregoing table; but this is an accident of the figures, since a Frog woman in house 181 (see map 1) was instanced to me as having had a Corn husband. As for Badger and Bear, so far from there being any prohibition, there seems to be a particular tendency for Bear to wed Badger — five cases out of nine recorded. As to Tansy Mustard and Chaparral Cock, some thirty marriages would have to be known for the latter, and more than a hundred for the former, instead of a paltry three or four, before probability would be likely to produce an instance of their intermarriage. For Eagle, Sun, and Turkey, the list contains instances of the former marrying each of the latter; as between Sun and Turkey, there is no case in the table, but this is mere accident; since Lupi, a Sun man out of house 446, married a Turkey girl in 452.

It may accordingly be concluded that, however consistently the clan system of the Pueblos in general may go back to a simplified scheme, the Zuñi have no consciousness of any such scheme, except perhaps in identifying their clans with differently named ones of other tribes. Their fifteen clans are to them perfectly independent and equivalent units, each as thoroughly distinct from one as from all the other thirteen. Indirect evidence therefore confirms the outright statements of the Zuñi: they possess no phratries as social units. The probable symbolic grouping of clans in certain mystic ritualistic connections is wholly secondary and superficial to the Zuñi social fabric.

SUB-CLANS.

Most of the larger Zuñi clans are recognized by the older people as comprising subdivisions. Sub-clans of the same clan cannot intermarry. They do not enter into daily life. The younger people are barely aware of their existence, except for the Pikchikwe, and do not know their own sub-clans. The answer to the question: "Kwap to annotayye, what is your clan?" is invariably the name of the clan, not of its subdivision; thus: "Pikchikwe," not "Mullakwe." The sub-clans, — barring the Raven and Macaw divisions of Pikchikwe — are moreover not mentioned in either mythological or ritual connection by Cushing or Mrs. Stevenson; so that their function, and their place in the life of the nation, remain obscure. Their significance to the student lies in certain connections which they help to establish between the clans of the Zuñi and of the other Pueblo groups.

The following are the sub-clans as recited by the governor's father, and in part substantiated independently by other informants.

Pikchikwe:

1. La-pikteikwe,¹ "brush" or "wood" Pikchikwe, *i. e.*, the division named after the plant itself. Also called *La-tanne*.
2. Mullakwe, macaw.
3. Kokkokwe, raven or crow or god.
4. Kwallacikwe, raven or crow. The informant and another insisted that *kokko* and *kwallaci* were two names for the identical bird.

The equivalent of Zuñi Pikchikwe among other Pueblos clearly is the Kachina clan. Now Kokko, which means "god" as well as "raven," is the Zuñi equivalent of the Rio Grande and Hopi Kachina. It is therefore probable that Kokkokwe in the present connection means "god-people" rather than "raven-people," and that Kokkokwe, as a sub-clan name, is merely a synonym of Kwallacikwe, which refers jointly to raven and crow, these two birds not being distinguished in native terminology. I have heard mention of a part of the Pikchikwe who formerly went north and became "Kokko" — and gods rather than birds seemed to be meant. Perhaps the accident of identical though discrete words for raven and god led to folk etymologizing; or on the other hand, a myth which told of the raven-crows of the north turning into gods (or vice versa), may have led to one and the same Pikchikwe subdivision being called both Kwallacikwe and Kokkokwe.

The governor organized the Pikchikwe clan differently from his father. He first set off the La-pikteikwe from all the remainder of the clan. This remainder he designated as Kokkokwe, with the Mullakwe merely *patcippa*, "sticking on" to them. Kwallacikwe he disposed of as a synonym of Kokkokwe. When there are two Koyyemshi impersonators from Pikchikwe, which happens twice in four years, one is La-pikteikwe, one Mullakwe-Kokkokwe.

¹ The ending -kwe throughout signifies "people."

There is thus a fourfold division recognized in this clan, and two twofold ones. One of the latter enters into myth. But the two recorded versions of the myth, already referred to, differ: one divides the clan and the other the nation; neither coincides with the division of the clan as admitted in actual practice. This is characteristic Zuñi loose-endedness: everything is systematically organized, but no system ever comes out exactly. I suspect that the primary division is a binary one, as in the Badger clan, and that the supernumerary synonyms are the result of conflicting tradition. This interpretation accords with the evidences of polarity in the general Pueblo clan system, as discussed below. But the number of sub-groups actually existing is three: Dogwood, Macaw, and Raven-Crow-God.

I learned of few individuals who were *La-piktekwe*. *Pikchikwe* people who were interrogated usually claimed to be either *Mullakwe* or *Kokkokwe-Kwallacikwe*, more frequently the former. Even this appurtenance is generally known only to their relatives. The governor's father several times mentioned *Pikchikwe* individuals, but in scarcely any case was able to specify the sub-clan.

Kyakkalikwe, Eagle.

1. *Pockwakwe*, a black eagle.
2. *Kyakkyalikwe*, named for *kyakkyali-k'ohanna*, "eagle white," probably the bald eagle, as it was said to have a white tail.

Tonnashikwe, Badger.

1. *Tonnacikwe*, badger proper.
2. *Mu-tonnacikwe*, *Mukwe-badger*, that is, *Moki* or *Hopi* badger. These people long ago lived with the *Hopi*.
3. *Pettsikowakwe*, bent over straw.
4. *Huhtetcikwe*, a plant something like a sunflower.

The interpreter happening to be of Badger clan, I asked him to which of the four divisions he belonged. He did not know, and learned with evident interest from the old man, a clan mate, though not a blood relative, that they both were *Mu-tonnacikwe*.

Subsequently the informant stated that there are only two kinds of *Tonnacikwe*, the *Tonnaci-k'ohanna* or white badger, the *Tonnacikwe* proper; and the *Mu-tonnacikwe* or *Moki* badger people, who bear the epithets *Pettsikowakwe* and *Huhtetcikwe* as nicknames. In the time of his grandparents — he is now about sixty-five — there was a famine, which drove some of the Badger people to the *Hopi*, where they lived for some time at *Walpi*, or at least on the first mesa. This was before his birth; but his mother grew up among the *Hopi*. Of the older people who took part in this emigration, or their aged descendants, only he, *La'tiluhsi*, and *Naci* remain; *Tu'otei*, *Mesta*, *Hammalu*, *Kw'ets'a*, *Yua'ai'ti*, *A'totsiky'e'a*, *Ti'ahti*, *I'pela*, and others have died. Once, after their return to Zuñi, there were two "children of Badger people" among the *Koyyemshi*.¹ As the women of the clan were about to bring food to these two *Koyyemshi*, a man of house 387 (evidently a priest, as this is a Badger house in which one of the first six *ettowe* or priestly fetishes is kept) called out that each woman was at liberty to carry food to either man. Then the majority carried food to the *Koyyemshi* who was the child of those Badger people that had stayed at home, while the returned emigrants or their daughters supplied the one who (or whose mother) had lived with the *Hopi*. Thus the clan became separated (that is, the

¹ There are two children of Badger clan among the *Koyyemshi* in the years in which the ten personators are chosen from the *Ne'wekwe* and *Big-fire* fraternities.—Stevenson, p. 235.

occasion served to mark the public recognition of the two subdivisions). "But there is only one clan." — That these events took place exactly as the old man's information and memory present them, it would be credulous to assert; but the recency of the incidents, and their character, leave little room for doubt that something of the sort happened. The difference of this tradition from the clan migration legends of the Hopi is striking. The Zuñi may recall for a few generations incidents that actually occurred in their clans; they evidently have no sense of separate clan origins or histories: the Zuñi nation alone enters into their historic consciousness.

Towwakwe, Corn.

1. Luptsikwakwe, yellow corn.
2. Kw'innikwakwe, black corn.
3. Co'tsitokwe, "sweet" corn.
4. Miky'annakwe, corn-ear-water-people.

There is a mythological reference to the last group, though not specifically as a sub-clan.¹ After the Zuñi had conquered and destroyed the Ky'annakwe,² a boy and a girl of the latter secreted themselves, but at last ventured forth, and when they met a Zuñi, the girl took from her dress two ears of white corn, and extending them said: "See, we are the Mikianakwe (Corn people)." She and her brother were well received by the Zuñi, and the Kiakwemosi, the hierarchical head of the tribe, said to them: "You are the same as our people, the Towakwe." He selected a woman of the Corn clan to adopt them.

Mrs. Stevenson has a passage³ also about the black corn subgroup. At Heshotayalla the Zuñi found all the inhabitants dead or fled but four, who were inhaling fumes to prevent the odor of the Zuñi from killing them. The old man of the four survivors said: "We were the Yellow Corn people; you have destroyed or driven off all but ourselves; we are saved by inhaling my medicine, but it has made our corn, which we hold in our belts, black, and we are now the Black Corn people." Since that time they and their descendants have been called the Black Corn people. Since his death his ettone has been in the possession of this old priest's descendants, the Kwinnakwe (Black Corn people).⁴

It is probable from Mrs. Stevenson's account of the "Quadrennial Dance of the Kianakwe" that these two passages of the creation myth are reflections of an association between the Corn clan and the ceremony. Thus she says: "The personators of the Kianakwe are always members of the Corn clan and Chupawa Kiwitsine." The Chuppawa Kiwitsinne or kiva is named after corn parching there, according both to Mrs. Stevenson⁵ and my own information.

K'oloktakwe, Crane.

1. K'oloktakwe proper.
2. Mo-kyissikwe, a tapering striped pumpkin.

The same informant, and others, stated that Shohwitakwe, Deer, and Ma'wikwe, Antelope, could not intermarry; in fact, insisted that they were only one annota. The lieutenant governor also coupled these two as "blue deer" (na'le) and "yellow

¹ Mrs. Stevenson, p. 44.

² *Ibid.*, p. 36.

³ *Ibid.*, p. 45.

⁴ Extinct since 1902 according to the same authority, p. 292, where the clan is named Kwinnikwakwe.

⁵ P. 62.

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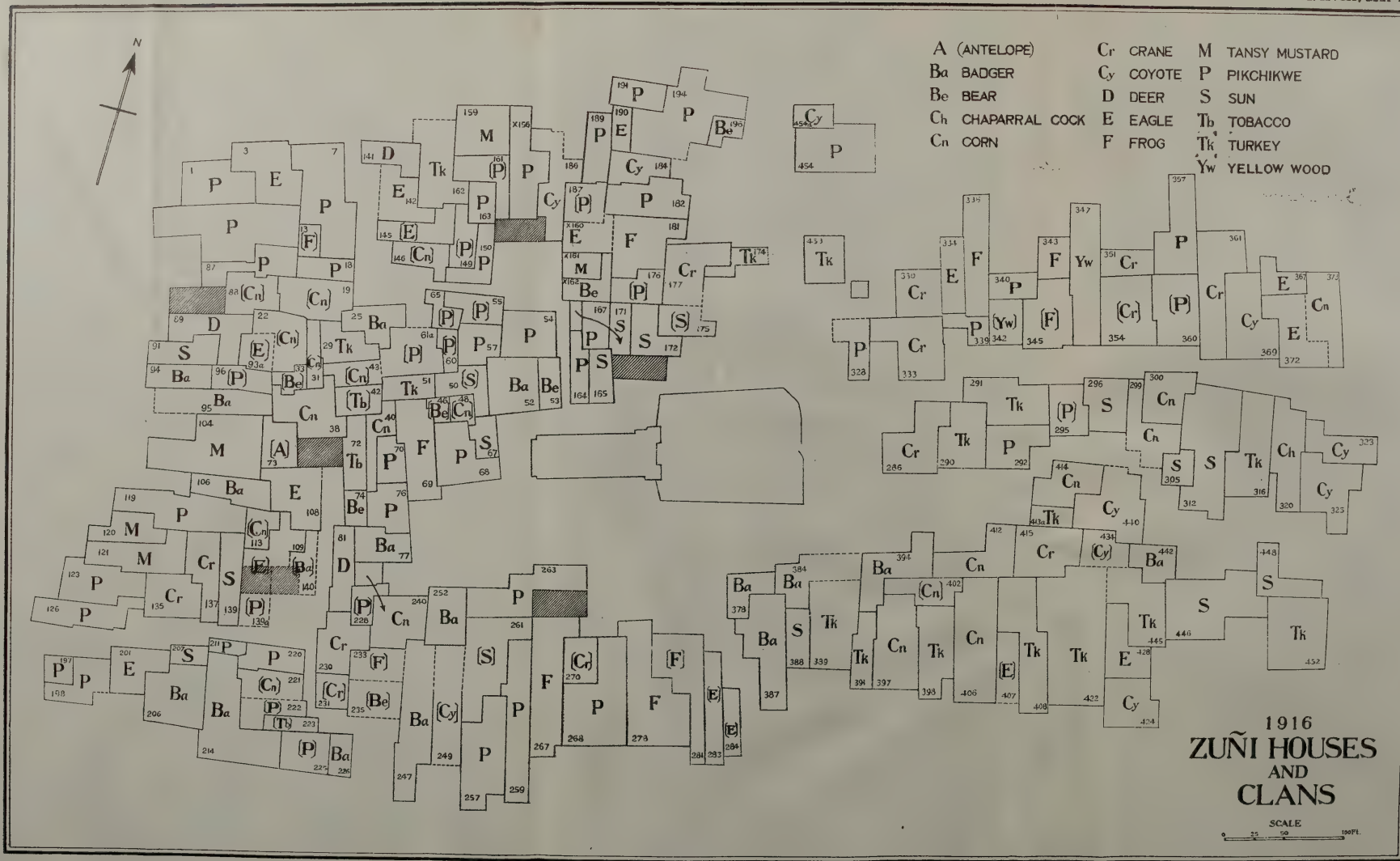
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deer," precisely as he coupled the subdivisions of other clans; though in the present case without being able to give a generic clan name. Most informants, however, mention Ma'wikwe as well as Shohwitakwe in listing clans.

One informant mentioned, and another denied, Ance-k'ohanna and Ance-kw'inna, white and black divisions of the Anshekwe or Bear clan, and Tonna-k'ohanna and Tonna-kw'inna, white and black Turkey.

As regards Turkey, a Zuñi stated that the clan ettonne or fetish was once two, am pappa ta an ikyinna, "her older brother and his younger sister" — ettowe are frequently personified and sexed in myths. Perhaps the Ahhayuta or war gods intended the clan to be divided like Pikchikwe. But it is a single clan now, with only one ettonne.

LOCALIZATION OF CLANS.

Victor Mindeleff long ago presented a map of Oraibi, compiled by A. M. Stephen to show the degree to which clans were localized within Hopi towns.¹ The impression which this map has always made on me, and on nearly all colleagues with whom I have discussed it, is that there is no localization to speak of at Oraibi and little anywhere at Hopi, the clans being distributed nearly as if they had been randomly strewn over the pueblo. A number of groups of two or three houses of the same clan are what might be expected as the result of an unusual increase of a family for a couple of generations, such as is bound to occur every now and then, and which would lead naturally to the building of an extension, or the division of an old home between two branches.

It was primarily a wish to determine how far Zuñi conditions are parallel to Hopi ones in this matter of clan localization, that led me to resurvey the modern pueblo, as a basis for the distribution of clans as shown on Map 1.

From this map it appears that groups of families of the same clan, probably each derived from a former single family, occur at Zuñi as among the Hopi. The groups are larger, sometimes covering five and six adjacent houses. But this seems to be only a natural result of the greater mass of population at Zuñi.

The extreme outcome of this tendency is visible in four groups of Pikchikwe houses in the northern and northwestern part of the pueblo, which appear conspicuously in the small map (number 2) devoted to the distribution of this clan.² These four groups contain a total of twenty-two³

¹ Bur. Am. Ethn., Ann. Rep., VIII, pl. 37, pp. 105-108, 1891. This is reproduced, in larger form, and with the addition of similar maps for other Hopi towns, by Cosmos Mindeleff in *ibid.*, XIX, 639-653, 1900.

² In maps 2, 3, and 4, houses no longer inhabited in 1916 are included with those inhabited. In map 1 the former are distinguished by brackets around the letters indicating the clan affiliations.

³ Counting house 184, now Coyote, as Pikchikwe, which it originally was.

families as my informants reckoned them, or nearly half of the clan in the pueblo proper. It is not necessary to postulate that each of these groups is wholly the outgrowth of an originally single family. There may have been two or more families in the same part of one town block, each of which underwent a period of expansion and thus grew, in the area in question, until they met. A historical family census will be necessary to establish the actual events in these cases. But whether the original nucleus was single or double or triple, the same process has been at work.

This is confirmed above all by the frequency of pairs of adjacent houses of one clan. Such pairs appear for practically all clans and in all parts of the town.

A few specific cases of splitting of houses, or building of an annex, have also been obtained.

In the northeast block the two Crane houses containing rooms 333 and 330 were not long ago held by a single family.¹ The same is true of houses 351 and 354. This was said to be "one house" (i. e., family) whose members lived apart, on two sides. Crane houses 230 and 231 were similarly connected.

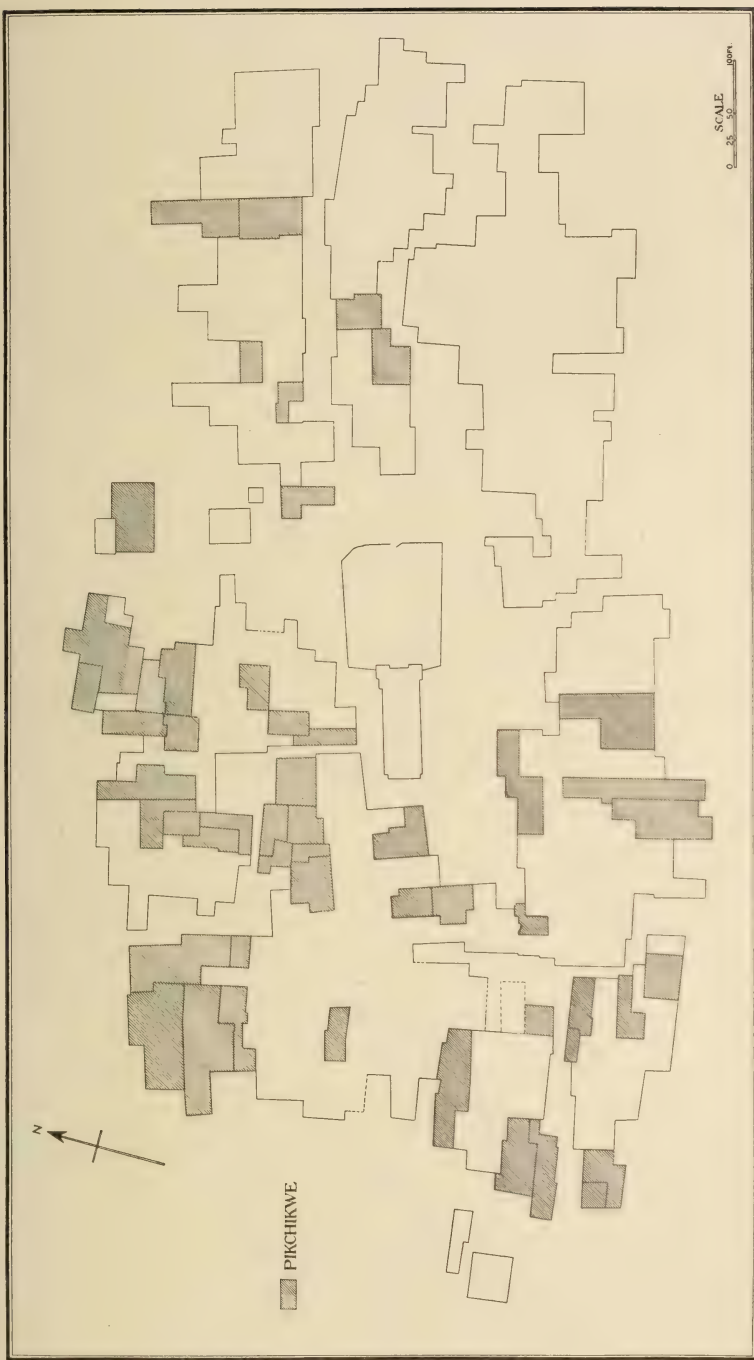
A somewhat different case is provided by the two Pikchikwe houses at the southwest corner of the town, 197 and 198. When Cushing lived in these rooms they formed one house. Subsequently the northwest corner was sold to another Pikchikwe family, though whether connected or unconnected by blood is undetermined. In the same block, Pikchikwe houses 211 and 220 are inhabited by sisters; and 164 and 167 in the north block are occupied by mother and daughter.

Other pairs of adjoining houses of the same clan that are inhabited by relatives and once each formed a unit, are:—

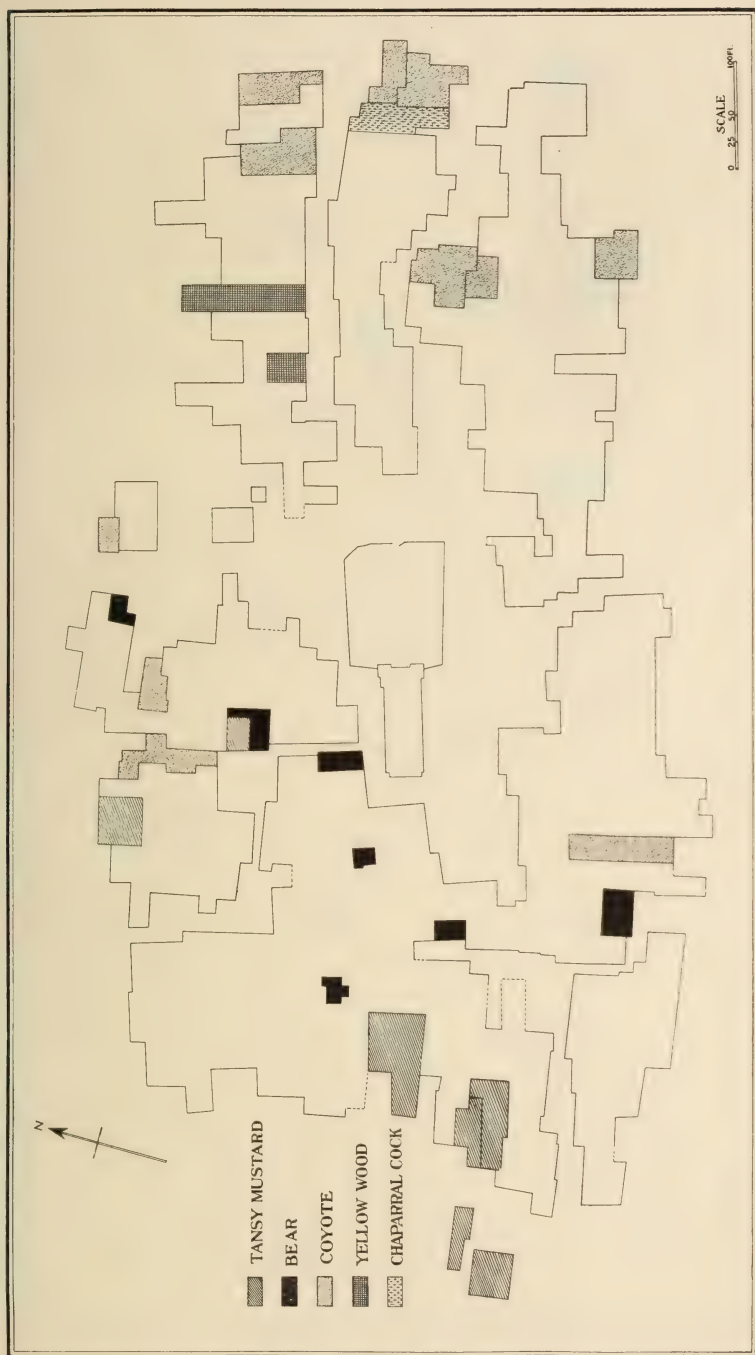
Sun	171, 165, mother and daughter
Frog	278, 281
Frog	343, 345
Eagle	283, 284
Eagle	367, 372
Coyote	325, 323, sisters
Tobacco	72, 42 (probably related)

This process of gradual extension of a single family must tend to lead to random local clustering, as distinct from definite localization with reference to the town as a whole. When an entire family moves to a new home, or part of it secedes, both the clustering and such former localization as there may have been, are impaired. Such shifts are frequent today, particularly to the suburbs; but they constantly occurred in the old days also, when the population was wholly confined to the pueblo proper. They are of interest because they demonstrate that if true localization of clans ever existed, it would have been seriously disturbed in two or three genera-

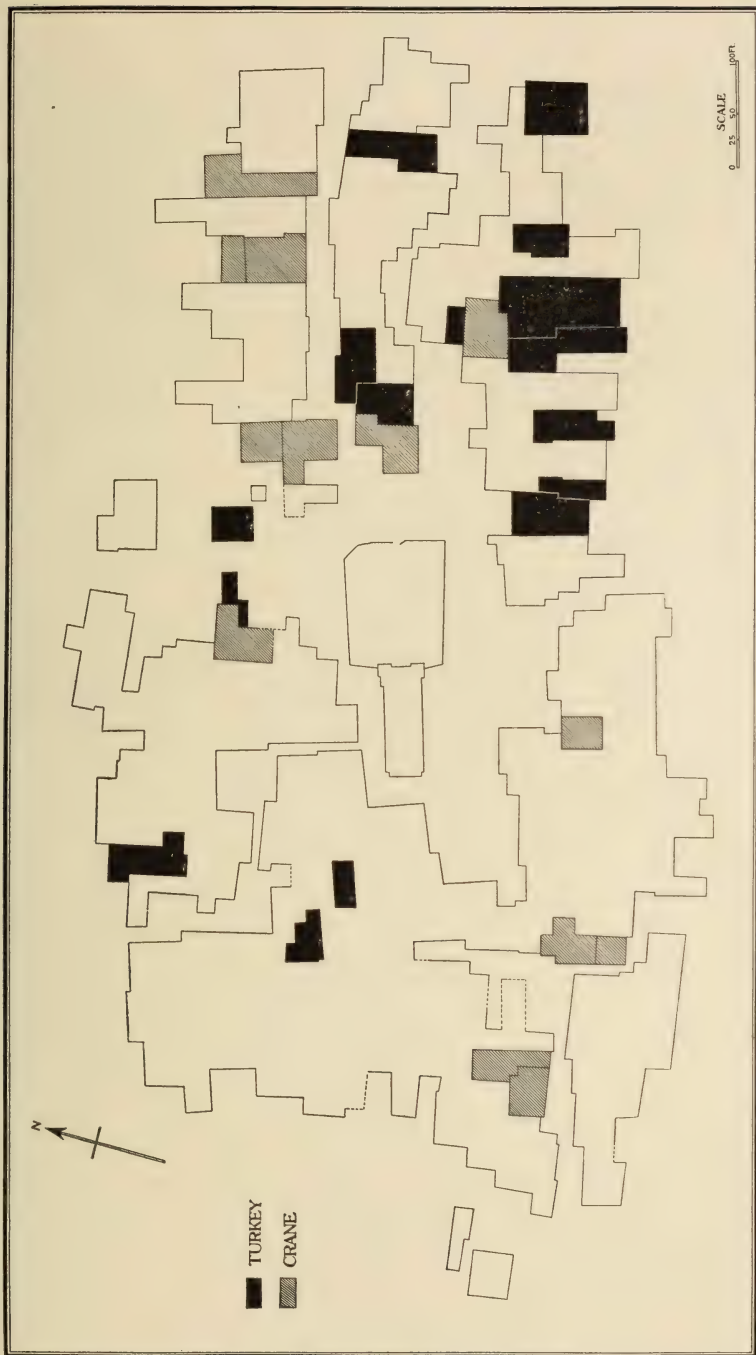
¹ Houses are referred to by the numbers which they bear on maps 1 and 5 and in table 3.



DISTRIBUTION OF THE PIKCHIKWE CLAN.



DISTRIBUTION OF FIVE SMALL CLANS.



DISTRIBUTION OF THE TURKEY AND CRANE CLANS.

109³

tions, and perhaps largely obliterated in two centuries and a quarter. In short, the map of Zuñi gives but limited evidence of the localization of clans as integral bodies today. In addition, there are several processes at work which are strong enough to have very thoroughly disarranged such blocking of clans into units if it had existed when the town was founded or resettled in 1693.

The first of these causes, and perhaps the most potent, is the entry of a woman into her mother-in-law's home. This is contrary to Zuñi custom; but it constantly happens. I was at first inclined to believe my informants' statements that this was a modern decadence of ancient institutions. Among most Indian tribes such throwing out of gear of native customs is only too sadly familiar to the ethnologist. But I no longer consider the practice to be an innovation at Zuñi. In the first place, the whole fabric of Zuñi social and even economic life is too thoroughly un-American to make it likely that it should have yielded at this one point alone. There are alien elements in this life; but they have not in the least altered the plan of ancient custom. Secondly, I have learned of cases of old women going to live in their husband's houses, and even the grandmothers of middle-aged women. Finally, there is no reason to believe that the motive which usually underlies the practice today — incompatibility or quarrels between the son-in-law and one or more of his wife's house mates — should not have been equally potent in the past. I conclude therefore that the act of the wife joining her husband was anciently in the same status as the act of marrying into one's father's clan: both were contrary to recognized usage and were viewed with disfavor, but both were practised. I should estimate that from five to ten percent of Zuñi women always flew in the face of propriety to live with their husbands rather than lose them; and I venture to say that in the year in which Coronado came complaint was nearly as frequent as now about the degeneracy of the existing generation. The generalized past is always right compared with the present, because, its lapses being forgotten, it takes shape as the embodiment of an ideal, against which the present can offer only an imperfect reality.

Now often, the stay of a woman in her husband's natal home is only transient; or if permanent, her offspring are outnumbered by the children that belong there. But sometimes it must happen that her husband's sisters are childless, or that they too go away, or that he has none; and then, in a generation or two, the women of that house are no longer of the original clan, but of that of the introduced ulani. Here are some such cases.

House 68, originally Badger, is now Pikchikwe, in Zuñi reckoning. Two Badger men remain, the women have died, the only adult female inmate is the daughter of the introduced Pikchikwe wife of one of the Badger men; and she has a Corn husband and four Pikchikwe boys and girls.

184, originally Pikchikwe, has become Coyote through the entry of a woman from 434.

x161 and x162 were originally one Bear house. The husband was Badger. His brother, married to a Tansy Mustard woman in 159, disagreed with her house mates. He therefore bought from his brother, or rather from his brother's Bear wife, the x161 part of the latter's house, and there installed his wife and himself. x161 is therefore a "new house," and the Tansy Mustard clan is resident in a new quarter.

House 159 itself seems to have been once subjected to an intrusion, since it contained Badger men and women as well as Tansy Mustard. A Badger woman from it married into Sun house 214, on the opposite side of town. The Sun people have left, for one reason or another; and 214 is now Badger.

89 is an old Deer house, which remains to this clan. But the grandmother of the woman now in it entered 141, which then belonged to another clan. Now 141 is Deer.

328, or perhaps formerly a building adjoining it on the west, is a Tobacco clan house, probably derived from 42. No Tobacco women of this house are left; but its senior male was joined by his Pikchikwe spouse; and 328 is now indisputably Pikchikwe, as indeed the Zuñi invariably reckon it.

72 is still Tobacco; but one of the men born in it brought in his Sun wife. They separated; but their Sun daughter remains in her natal home. Should her father's people pass away without female progeny, her presence would convert 72 from a Tobacco to a Sun house.

347, the sole Yellow Wood house, bids fair to be soon lost to that clan. An old Yellow Wood woman inhabits it with her son and his Sun wife, who belonged in 261. The old lady herself once left home, and spent part of her married life in Frog house 278.

440 is Coyote, and likely to remain so; but it harbors a Pikchikwe wife.

454, Pikchikwe, held for a time a Crane woman from 333. The cause of her leaving her home is not known to me. But in 1916, in a prolonged and serious illness, she returned to her mother in 333, and her husband came with her. Perhaps trouble effaced disagreements that had occurred.

There are further cases of the present habitants of a house emanating from another: the causes are not clear to me, but probably unconnected with the wife following her husband. Thus 226 is out of 94; 186 out of 373; 268 out of 87; 196 out of 33. These are all instances within the old pueblo proper.

Houses are also bought and sold. Besides x161 and 197, already mentioned, the following cases have come to notice.

207 was originally Eagle. The owners moved to 548 in the suburbs. A Crane man from 135, across the street, bought the vacant house for his wife, a Sun woman out of 214 adjoining. 207 is therefore now Sun instead of Eagle; but both husband and wife remain within a few feet of where they were born.

Houses 164, 165, 167, and 171 were formerly held by a single Sun family. Then 167 was sold to a Pikchikwe family, of which Tcuyati was the head. 167 is an interior house; a small room between it and the alley was not included but retained by the original owners, which accounts for its being part of 171 now. The new-

comers in 167 wanted more space; two sons-in-law preferred separate establishments; so 164 was bought. One sister now lives here; the other, married to the head priest of the bow, Tsawela, lives with him and her mother in 167. The unsold portion of the Sun house was also divided. The mother did not agree with her Chaparral Cock son-in-law; so she retained the rear rooms, 171, and her "children" inhabit 165. There are thus two clans and four households where formerly one was counted. In each case the older people inhabit the interior rear, the younger generation the front abutting on the street. It would be erroneous, however, to think of a complete breach between mother and daughter in either case. There may have been friction; but the front and rear are connected, the doors generally stand open, and to all appearances the fullest amity prevails. In fact, in an enumeration the Zuñi generally count 164 and 167 as one house, and 165-171 as one. There are probably many households in which a similar understanding as to privacy prevails, and which might with equal justice be reckoned as containing two or three families each, if the circumstances of their life were known in equal detail.

House 67, consisting chiefly of one room fronting on the street, was sold about 1914 to the Sun woman and Badger man who had been living in the adjoining interior house 50. In this case the families may be supposed to have been related, and the original owners of 67 to have moved outside the pueblo. The price paid was: one buckskin; one ehha or woman's gown; four necklace strands of old olivella shell beads; 2 sattowe or loops of turquoise beads; and ten dollars in money. The kind of property given is typical of Zuñi trading. There is much wealth in the town, but little American money. Good bead necklaces are reckoned at ten sheep each; at least that is what the Navaho gave for them until recently. Turquoise beads of course vary in value according to quality of the stone and fineness of workmanship. Two average loops were sold to a Navaho recently for eighty-seven goats. Exceptionally good strands are rated at over a hundred dollars. The total paid for this house may therefore be conservatively estimated as the equivalent of one hundred and fifty dollars. It is evident that this sum represents more than the labor required to build a small house, and that part of the consideration was given for title to the site.

270 was bought by Crane people from its original Frog owners, presumably the inmates of 267.

373 is an old Coyote house. The bulk of its inmates long ago settled in 186. An old woman however remained behind. The northern end was sold to some Corn people, apparently relatives out of two houses, 22, which was a ruin in 1915, and 113, which was then inhabited. After the old woman's death, her relatives in 186 sold the remainder of her house to the same Corn people, who in July, 1916, had pulled down the southern corner of the structure and were remodeling the remainder.

Some years ago a Corn family, possibly also out of 22, bought the unoccupied southern end of Crane house 361. They failed to make payment, however, and soon after actually purchased the Pikchikwe house 300, across the street from 361 and adjoining the Corn house 299. The Pikchikwe owners of 300 moved into outside house 536.

The degree of clustering of houses of the same clan within the old pueblo is indicated by the following list, which comprises inhabited, abandoned, and ruined houses as determined in 1916:

	Total Houses	Separate Clusters
Pikchikwe	50	24
Eagle	16	12
Badger	18	13
Sun	16	11
Turkey	16	13
Corn	20	11
Crane	13	9
Frog	10	8
Coyote	10	9
Bear	7	7
Tansy Mustard	5	4
Tobacco	3	2
Deer and Antelope	4	4
Chaparral Cock	1	1
Yellow Wood	2	2
	<hr/> 191	<hr/> 130

The total number of house groups of the same clan is fully two thirds the number of houses; which means that a large proportion of the houses stand isolated, so far as clan affiliation goes. It is also observable that the clustering is pronounced in proportion to the strength of the clans,¹ which indicates that it is accidental, that is, influenced by the various causes that have been discussed, and not in any considerable measure a relic of ancient localization. If we assume ancient restriction of each clan to a certain quarter, a clan of five or ten houses would in the course of time come to have this original arrangement disturbed in the same degree, that is, in the same relative proportion, as a clan of fifty families. This is clearly not the case. If, on the other hand, the various clan houses had been originally distributed quite randomly, it is extremely unlikely that in a clan of only five families any of these would find themselves in juxtaposition; a clan of ten houses might have possibly one pair adjoining; while in a clan of fifty in a town of two hundred houses, a tolerable number would be bound to be adjacent. It is evident that this is more nearly the condition which really obtains; and while the actual clustering is apparently somewhat greater

¹ The one discrepancy is Corn, with twenty houses in only eleven clusters, including one of six houses — 88, 19, 22, 31, 43, and 38. It is to be noted, however, that Corn is the only clan that shows more houses in the foregoing list than are accredited to it as inhabited in the pueblo and suburbs combined today: twenty former houses in the town, as against nine in town and six outside today. The other large and medium sized clans uniformly show an increase from the foregoing list to table 4; due either to a readier splitting of families as they move into the open tract outside the former town lines, or to incompleteness of information given regarding the abandoned and often totally broken-down houses in the interior of the pueblo. However this may be, the Corn data are so divergent that the list proportion of twenty to eleven must be used with reserve.

than mere mathematical probability would produce, this excess is easily accounted for by the occasional growth of a family into an adjoining house or two.

It appears then that there is no warrant for the assumption that Zuñi was ever populated by clans settled in blocks comparable to the ghettos or foreign quarters or negro wards of our cities. People of the same clan do often live in adjoining houses; but this seems due mainly to household growth and connections of much the same type as occur among ourselves, and little, if at all, to any sense or operative force of clan solidarity. The modern conditions in the Hopi towns, as revealed by the published maps, appear to be thoroughly similar; and there is every reason to believe that the same causes have been at work there in the past as at Zuñi. In fact, I doubt very much if it would have occurred to any one as worth while even to discuss clan grouping at Hopi but for the ungrounded assumption that a clan is a discrete and self-contained unit within a heterogeneously complex community. As this is obviously not the fact today, the only possibility that remained was to believe that it had been a fact, to construe every possible bit of evidence as a vestige of such an original condition, and to forget the overwhelming mass of data not in accord with the chosen interpretation.

What is established for Zuñi and by implication for Hopi, must be regarded as having been the probable condition in the Rio Grande pueblos also. In fact, I trust the foregoing discussion has made it reasonable that clans may be only subdivisions of the community wherever they occur, and that to take for granted that they are or anciently were disparate and self-sufficient units independent of the tribe, is never legitimate unless there is specific and impartially weighed evidence in that direction.

Of the following tables, 3 lists all the houses inhabited in Zuñi and the environs in 1916 as well as the empty and ruined houses, as far as these could be determined. The reference in the first column is to the house number as shown in map 1 or 5.¹ The second column gives the clan affiliation of the house, the third the clan of the male head of the household or best known man in the house. Vacant houses are indicated by parentheses. The fourth column lists former ownership, movements, and miscellaneous facts.

¹ Maps 1 and 5 refer to 1916. Maps 6 and 7, on which they are based, were made in 1915. The usual amount of building and rebuilding took place in the intervening year; but the discrepancies are on the whole so slight, and affect the clan distribution so little, that it did not seem worth while to revise maps 6 and 7 at innumerable minor points. Some of the changes are noted in the final section on "The Town."

TABLE 3.

ZUÑI HOUSES IN 1916.

House	Main Block		
	Clan	Man	
1	P	Cr	
3	E	Cr	
7	P	E	
18	P	Cn	
13	(F)		
19	(Cn)		>526b ¹
25	Ba	P	
29	Tk		
43	(Cn)		Doubtful
61a	(P)		>454
60	(P)		
65	(P)		Possibly part of 55
55	(P)		>501b
57	P	Ba	
54	P	Ba	
53	Be	Ba	
52	Ba	Be	
50	(S)		
67	S	Ba	Bought by 50. Originally S
68	P		Originally Ba; P ♀ married in
48	(Cn)		Doubtful
46	(Be)		
51	Tk		
69	F	S	
76	P	Cn	
77	Ba	Ch	
81	D	S	
74	Be	P	
72	Tb		>557, 561
42	(Tb)		>328?; now part of 72
40	Cn	Cr	
70	P	Tk	
38	Cn		
31	(Cn)		Now part of 38
33	(Be)		>196, 534f
22	(Cn)		Once part of kyappatcunna; >373
93a	(E)		
73	(A)		
108	E		
109	(E)		>555b
113	(Cn)		>373

¹ The sign > is to be read: "moved to."

Main Block			
House	Clan	Man	
140	(Ba)		>517a
139a	(P)		
139	S	P	
137	Cr		
135	Cr	P	
126	P	Cn	
123	P		
121	M		>576
120	M		>577
119	P	F	
106	Ba	Be	
104	M		
96	(P)		>91 >502; now part of 94 Ba
95	Ba		
94	Ba		>555a
91	S	P	La-piktcikwe man
89	D	Ba	
88	(Cn)		
87	P	Tk	>268
84	P	S	

North Block			
141	D	Tk	An offshoot from 89
162	Tk	Ba	
159	M		Also Ba
x156	P	Be	
186	Cy	Ba	ex 373; originally S
189	P		
190	E		>506
191	P		Originally E, part of 190
194	P	S	>532x
196	Be	Cy	ex 33
184	Cy		Orig. P; Cy ♀ ex 434 married in
182	P	E	
181	F	P	
176	(P)		
177	Cr		
179	Tk		Orig. S, >518c
175	(S)		>530b
172	S		
171	S		
165	S	Ch	Daughter of ♀ in 171
164	P		Daughter of ♀ in 167. Orig. S, bought from 171
167	P	Cy	Orig. S, bought from 171
x162	Be	Ba	
x161	M	Ba	Orig. Be, bought from x162; the husbands are brothers; M ex 159.
x160	E		

North Block			
House	Clan	Man	
187	(P)		> 149; relatives of 189
161	(P)		> 520
163	P		
150	P		
149	(P)		ex 187, > 541
146	(Cn)		
145	(E)		> 514
142	E	Be	
Southwest Block			
197	P	Ba	
198	P	Cn	
201	E		
206	Ba		
214	Ba	S	Orig. S, > 503; Ba ♀ ex 159 married in
207	S	Cr	Orig. E, > 548; Cr ♂ ex 135 bought for S ♀ ex 214
211	P		
220	P		Sister of ♀ in 211; see 510a, b
221	(Cn)		> 528
222	(P)		> 549b
223	(Tb)		> 558, 549a, 517a
225	(P)		> 556
226	Ba		ex 94
South Block			
230	Cr	S	
231	(Cr)		> 547; relatives of 230
233	(F)		> 527b
235	(Be)		
247	Ba		
249	(Cy)		> 454a
257	P	Tb	
259	P		
267	F	P	
268	P	F	ex 87
278	F		
281	(F)		> 546; relatives of 278
283	(E)		> 575
284	(E)		> 515; orig. one house with 283
270	(Cr)		Orig. F. Bought.
263	P	D	
261	S		> 388
252	Ba	Be	
240	Cn	P	
228	(P)	Ba	
Northeast Block			
454a	Cy		ex 249
454	P		

Northeast Block

House	Clan	Man	
453	Tk		
328	P	Tb	P ♀ married in
333	Cr	Ba	
330	Cr		Relatives of 333
339	P	S	
334	E		
336	F		
340	P	Cr	
342	(YW)		Now part of 340 P
343	F		
345	(F)		Relatives of 343
347	YW		Also a S ♀ ex 261 married in
351	Cr		
354	(Cr)		Relatives of 351
357	P	Cr	579, P, may be a separate household from this
360	(P)		Sometimes reckoned part of 357
361	Cr		
369	Cy		
367	E		ex 372
372	E		
373	Cn		Orig. Cy, >186; bought by Cn ex 22 and 113 in 2 parcels

East Block

286	Cr		
290	Tk		
291	Tk	Ba	
292	P	Tb	
295	(P)		>7
296	S		
299	(Cn)	Tk	>540
300	Cn		Orig. P, >536; bought by Cn after south end of 361 bought but not paid for
305	S	Cr	>537a
312	S	Cr	
316	Tk	E	
320	Ch	E	
323	Cy	Cr	
325	Cy	E	Sister of ♀ in 323

Southeast Block

384	Ba	P	
378	Ba	E	
387	Ba	P	
388	S		
389	Tk	Ba	
391	Tk		
397	Cn		
398	Tk	Cn	

Southeast Block			
House	Clan	Man	
406	Cn		
407	(E)	(S)	
408	Tk		
422	Tk		
434	(Cy)		>184
424	Cy	E	
428	E	P	>543, in part
445	Tk	E	
446	S	Ba	
452	Tk	E	
448	S		
442	Ba	E	
440	Cy	P	
414	Cn	P	
413a	Tk	Ba	
415	Cr		
412	Cn		
402	(Cn)		Relatives of 406
394	Ba		

Outside Houses—North of River

573	P	Tk	
574	P	E	♂ ex 407
575	E		ex 283
576	M		ex 121
577	M		ex 120
501a		Cn	♂ ex 88
b	P	M	Built by former husband now in 501a; ex 55
502	P		
503	S	P	ex 214
570	E	Ba	
504a	P		
b	P		Sister of ♀ in 504a
c	F		
d	F	E	Sister of ♀ in 504c
505	P	D	
505x	E	D	
506	E	D	ex 190
509	Cn	P	
510a	P	Tk	
b	P	F	Sister of ♀ in 510a; ex 211, 220
511	P	E	
512	E	Tk	
513	Cr	S	
513x	Cn	P	
514	E		ex 145
515	E	P	ex 284
517a	Tb	E	ex 223
b	P		

Outside Houses — North of River

House	Clan	Man	
c	P	Cr	
d	S	P	
e	Ba	Ch	ex 140
f	Cn	Ba	Son of ♀ in 517e; ♀ ex 373
518a	P	S	Son of ♀ in 518b
b	S		
c	S		ex 179
519	Cr	S	
520	P	Ba	ex 161
521	Tk		
526a	Tk	Cn	Orig. F
b	Cn	P	Sister of ♂ in 526a; ex 19
527a	F		
b	F		ex 526a, ex 233
528	Cn	P	ex 221
529	(F)		ex 181
580	Cy	Cr	
530a	E		
b	S		ex 175
c	S		ex 91
532	P		
532x	P	E	ex 194
533	Tk		ex 534a
534b	E		
c	E		
d	Ba		
e	P		
f	Be		ex 33
535	E	P	
536	P		ex 300
537a	S	M	ex 305
b	Ba	E	
538a	Ba	S	
b	Cy	P	
539	E		
540	Cn		ex 299
541	P		ex 149
542a	Tk	Ba	
b	E	Cn	
543	E		ex 428

Outside Houses — South of River

544	E	A	
546	F	Ba	ex 281
547	Cr	S	ex 231
548	E		ex 207
549a	Tb	P	ex 223
b	P	Cn	ex 222

Outside Houses—South of River

House	Clan	Man	
564	E		ex 548
555a	Ba	P	ex 94
b	E	Ba	Brother of ♀ in 555a; ♀ ex 109
553	P		
556	P		
557	Tb		ex 72
558	Tb		ex 223
561	Tb		Sister of ♀ in 557
560	P		

Table 4 shows the number of inhabited houses of each clan in each of the blocks or parts of Zuñi, including those in the environs within a quarter mile radius of the pueblo—all at a greater distance, in fact, are only temporarily occupied farming houses, or summer residences.

TABLE 4.

INHABITED HOUSES, 1916 ¹

Clans	Blocks of Town							Outside ²		Total
	Main	N.	S.W.	S.	N.E.	E.	S.E.	N.	S.	
Pikchikwe	13	9	4	4	5	1	—	19	4	59
Eagle	2	3	1	—	3	—	1	14	4	28
Badger	6	—	3	2	—	—	5	4	1	21
Sun	3	3	1	—	—	3	3	7	—	20
Turkey	2	2	—	—	1	3	8	4	—	20
Corn	2	—	—	1	1	1	4	6	—	15
Crane	2	1	—	1	4	1	1	2	1	13
Frog	1	1	—	2	2	—	—	4	1	11
Coyote	—	2	—	—	2	2	2	2	—	10
Tansy Mustard	3	2	—	—	—	—	—	2	—	7
Tobacco	1	—	—	—	—	—	—	1	4	6
Bear	2	2	—	—	—	—	—	1	—	5
Deer	2	1	—	—	—	—	—	—	—	3
Chaparral Cock	—	—	—	—	—	1	—	—	—	1
Yellow Wood	—	—	—	—	1	—	—	—	—	1
All Clans	39	26	9	10	19	12	24	66	15	220

¹ A number of Zuñi families own houses, ruins, or house sites in the pueblo and a new home in the outskirts. A few keep the old and the new home in repair, but live mostly in the town. In all such cases only the house actually or usually inhabited has been counted in the table.

² N: North of the river; S: south of the river.

It is evident that the clans have abandoned the old town in very different ratios. Eighty-one families out of 220, or nearly thirty-seven percent of the total, now inhabit the outskirts. Pikchikwe, Sun, and Corn keep close to this proportion. Eagle far exceeds it, barely a third of its families remaining within the pueblo limits. Badger, Turkey, and Crane have moved in only a fourth to a fifth of the cases. But it is doubtful whether these variations possess any significance. The figures are small, and therefore subject to accident. If half a dozen additional Eagle families had elected to stay in their old homes, the proportion for this clan would have been substantially normal instead of quite aberrant. Above all, there is no conceivable machinery which would influence a clan to act as a unit in such matters. If one family has moved, a related one is more likely to follow it; but relationship operates in the male line as well as through women; and it would still be necessary to account for a greater first inclination to drift out. If the Eagle clan had chiefly occupied interior houses in the pueblo, which are now generally felt to be less desirable than those with street frontage, a reason would be evident; but such is not the case. The small Tobacco clan may prove a typical instance. Five out of six Tobacco houses are now in the outskirts; but all the inmates of these, comprising virtually the whole clan, are out of two old houses, 72 and 223. When the bulk of these families moved, the "clan" had moved. Yet it would be extreme to attribute anything like a "clan spirit" or sense of group solidarity to these two households. Had one family remained where it was, the percentage of emigrants would have been only fifty instead of eighty-three; had both elected to stay, it would have been zero.

There are fifty-two vacant houses in the pueblo — at least, I could obtain reliable record of only this number; but eighty-one occupied homes in the environs. On the face of things, there are therefore about thirty more families in Zuñi today than twenty years ago. I cannot explain this discrepancy which has been alluded to before; but suspect that in the main it is due to the former inhabitants of completely destroyed and torn down town houses having been lumped or overlooked by my informants.

For the study of clan localization, the old pueblo is however more important than the modern extended town. I therefore summarize in table 5 the evidence of map 1, with the clans arranged in the order of their present strength.

Certain distributional features are apparent, such as the absence of Pikchikwe from the Southeastern block, and the strength of Turkey in this section. More significant results are however obtainable from a grouping of the blocks. The three eastern blocks are apparently more recent than the others. The houses also generally are larger and stand on level ground.

TABLE 5.

INHABITED AND FORMER HOUSES WITHIN THE PUEBLO LINES.

Clans	Blocks							Total
	Main	N.	S.W.	S.	N.E.	E.	S.E.	
Pikchikwe	18	13	6	5	6	2	—	50
Eagle	4	4	1	2	3	—	2	16
Badger	8	—	3	2	—	—	5	18
Sun	4	4	1	1	—	3	3	16
Turkey	2	2	—	—	1	3	8	16
Corn	9	1	1	1	1	2	5	20
Crane	2	1	—	3	5	1	1	13
Frog	2	1	—	4	3	—	—	10
Coyote	—	2	—	1	2	2	3	10
Tansy Mustard	3	2	—	—	—	—	—	5
Tobacco	2	—	1	—	—	—	—	3
Bear	4	2	—	1	—	—	—	7
Deer	2	1	—	—	—	—	—	3
Chaparral Cock	—	—	—	—	—	1	—	1
Yellow Wood	—	—	—	—	2	—	—	2
(Antelope)	1	—	—	—	—	—	—	1
Total	61	33	13	20	23	14	27	191

The three southern blocks do not form such a natural or historical unit; but, temporarily, they may also be contrasted with the remainder of the town. This gives an eastern half of the town about half as populous, some decades ago, as the western, and a southern fringe also about half as strong, in number of houses, as the larger northern portion. The clan distribution in these respective halves is shown in table 6.

Table 6 at once discloses the principal basis of the "phratral grouping" by cardinal directions for which Cushing has made himself responsible, and which has been previously listed in table 2. It appears that Cushing's informants merely assigned each clan to the quarter in which it happened to be proportionally most heavily represented in the town. As the northern and western portions of the town are so much more populous than the southern and eastern, the relative rather than the absolute numbers must be considered. Thus Badger has thirteen houses in the west, five in the east, yet this is nearly the proper proportion for these directions. But eight northern houses against ten southern, with southern houses constituting less than a third of the town, is a notable deviation from average,

118^a

[illegible]

178¹⁸



TABLE 6.

CLAN DISTRIBUTION BY QUARTERS OF THE PUEBLO.

Clan	4 Western Blocks	3 Eastern Blocks	4 Northern Blocks	3 Southern Blocks	Indicated Localization	Cushing's Phratral Grouping ¹
Pikchikwe	42	8	39	11	W	M
Eagle	11	5	11	5	none	U
Badger	13	5	8	10	S	S
Sun	10	6	11	5	none	U [M]
Turkey	4	12	8	8	E	E
Corn	12	8	13	7	none	S [M]
Crane	6	7	9	4	E or N	N
Frog	7	3	6	4	none	D
Coyote	3	7	6	4	E	W
Tansy Mustard	5	—	5	—	W or N	W [S]
Bear	7	—	6	1	W or N	W [N]
Others	7	3	9	1		
	126	64	131	69		

sufficient to account for Badger being reckoned a "southern" clan. The situation is analogous for Turkey, Crane, Tansy Mustard, and Bear. Pikchikwe, as the conspicuously largest clan, was best fitted to represent the Middle, if there were to be seven "phratries"; and Eagle and Sun would obviously stand for the Above, and Frog for the Below, by a transparent symbolism, once these directions were to be provided for. In fact, aside from one or two of the very small clans, Coyote is the only clan for which the actual distribution and the phratral grouping definitely clash. We have an assignment to the west, when east is obviously indicated. The explanation is found in a ritualistic grouping of prey animals by directions, similar to that of birds and colors: this places the coyote in the west.²

¹ Bur. Am. Ethn., Ann. Rep., XIII, 368, 1896. Brackets contain variants given by Cushing in a subsequent manuscript quoted in *ibid.*, Bull. 30, part 2, 1018, 1910.

² The Zuñi animals of the six directions (Stevenson, p. 409; Cushing, Bur. Am. Ethn.; Ann. Rep., II, 16, 1883) are: N, Panther; W, Bear; S, Badger; E, Gray Wolf; U, Eagle, D, Shrew; with snakes and ants for all directions. In an account of the prey gods (p. 20 seq. of the same work), Cushing gives: N, Panther; W, Coyote; S, Wildcat; E, Wolf; U, Eagle; D, Mole. This mythologic and ceremonial symbolism may account for the directional assignment of the Bear, Badger, and Eagle clans, as well as Coyote; but it covers only a fraction of the Zuñi clan system. If an explanation of the Cushing grouping is to be made on a basis of symbolism at all, rather than on the ground of tendency toward clan localization in the town, it will perhaps be through a general Pueblo scheme of clan grouping by directions, some hints of the existence of which are discussed below.

It is even possible to pronounce Cushing's first grouping¹ as better, that is, more in accord with the geographical facts that seem to have determined the native classification, than his second one.²

I do not wish to be understood as casting any doubt upon Cushing's grouping. It is precisely the sort of thing which I believe emanates from the speculations of Zuñi priests. I wish however, to characterize it as an esoteric reflection of intrinsically accidental facts, and not in any sense a true phratral grouping, that is, a social classification connected with the actual clan organization or developed from it.

Map 5 sketches the distribution of clans in the outskirts of modern Zuñi. On account of the scale needed to include the considerable area, it has been impossible to combine an outline of the houses, as given in Map 7, with a designation of their clan pertinence, except on a sheet that would be unwieldy. Only clan symbols have therefore been introduced in Map 5. Contiguous houses are indicated by underlining of the symbols. Bracketed letters indicate that the house in question is uninhabited, or generally so, the central home of the family remaining in the old pueblo. Letters in parentheses show exceptional cases of houses in the possession of men, the women of the particular families being dead. Arrows indicate known movements of families. Arrows rendered in dotted lines indicate the removal of men.

Two inferences can be drawn from this map, which deals with conditions under which certain tendencies of Zuñi clan and house life are freer to express themselves than in the cramped pueblo proper.

The first is the cohesion of related families. This shows itself under the guise of a grouping of houses of the same clan. The essential factor that causes this collocation, however, appears to be blood relationship. Without a complete individual and family census, it is impossible to establish this contention with thoroughness; but I received a strong impression from Zuñi gossip and casual talk that such is the case. In the old town, a son-in-law or brother-in-law might wish to erect a separate roof for his wife, but the confined position of her natal home would often force him to choose between building a new house in a remote part of the town, or remaining with her in her ancestral one. The former alternative would not usually be resorted to except where pronounced temperamental friction offered a definite stimulus; for the Zuñi woman appears to have a strong attachment of some sort for the quarter or corner of town in which she has lived. If, on the other hand, the couple remained in the wife's natal home, they would

¹ Column four of Table 2; last column of Table 6.

² Column five of Table 2; brackets in last column of Table 6.

tend to be regarded, by the population in general if not by their fellow inmates, as merely part of the established household, at least until long years or changes in the composition of its membership resulted in their recognition as a separate though closely kindred family. In the open outskirts, with a fresh start, each man is able to build a house of his own for the one of the several sisters or daughters that is his wife, and recognition of the distinctness of his hearth is prompter and wider, even though his brothers-in-law erect homes adjacent to and communicating with his own. Interior communication seems to exist in practically all cases of adjacent houses, whether of the same or different clans.

It is further likely that where families of diverse clanship adjoin in these new and unrestricted portions of the pueblo, investigation would reveal that they also were in many instances connected by blood, kinship in the male line however veiling the tie under a diversity of appellation. So, among ourselves, if Smith and Smith live in adjoining houses, even the stranger suspects that they are brothers, whereas if Smith's home is next to Brown's, indication is lacking of the possible fact that they are brothers-in-law or husbands of sisters. Again I regret to have few positive data to offer: any considerable and reliable collection of facts of this kind involves not only the expenditure of much time in investigation, but should be preceded, if possible, by a certain degree of familiar acquaintance. The point is made here in order to guard against an over-hasty interpretation of the distributional features shown in the map through the sole means of the conventional clan pattern. There certainly are other factors involved, including patrilinear kinship; the precise degree of effect of these, in balance with the factors of matrilinear relationship and actual clan consciousness, remains to be ascertained.

The following are a few instances of blood kinship determining the position of recently erected houses: —

In consonance with clan relationship

504a and 504b, both Pikchikwe: sisters

504c and 504d, both Frog: sisters

557 and 561, both Tobacco: sisters¹

In violation of clan relationship

517e, Badger; 517 f, Corn; Badger husband is son of 517e

518b, Sun; 518a, Pikchikwe; Sun husband is son of 518b

526b, Corn; 526a, Turkey; Corn husband is brother of 526b

555a, Badger; 555b, Eagle; Badger husband is brother of 555a

407, formerly Eagle; 574, Pikchikwe; Eagle husband is out of 407²

¹ Several parallel cases within the pueblo have been previously given.

² Compare 207, originally Eagle, now Sun ex 214 with Crane husband ex 135, both adjacent houses.

The second point that emanates from Map 5 is that the Zuñi do not readily move their houses from one side of the town to another. With the modern houses in the open, there is no reason why they should not be located at random. Yet such cases of centrifugal shift as have been observed and recorded on the map by arrows almost invariably involve mainly a radial extension from the center of the town.¹ Because a family has lived fifty or a hundred feet north of the east and west axis of the old pueblo, seems no reason why when they build a new house an eighth or a quarter of a mile out, they should quite regularly locate north of the town. But the impulse is there. The force of this inclination is particularly marked for the former inhabitants of the southern blocks, since in most instances a southerly removal by them involves a settlement across the river, and particularly since all houses on that side of the stream more than a very few years old were erected prior to the convenience of a permanent bridge. Modern as all the particular circumstances involved are, they undoubtedly reveal a rather deeply rooted tendency of Zuñi custom toward orientation of the house with reference to the town. This tendency may be presumed to extend in considerable measure to other pueblos also, and in all likelihood to have been operative even in the prehistoric period.

It is also plain, though this is a matter connected with pueblo growth rather than the status of the clan, that the influences toward expansion are slow in gathering headway and continuous once they are in motion. It was fear of Navaho and Apache raids that avowedly drove the Zuñi to swarm in the old pueblo cluster. That danger must have been nearly over by 1870 and altogether a matter of memory by 1890.² The first hesitating outposts seem however not to have been erected until some time after the latter date, and the movement as such gained little headway until 1900 or subsequently. Even within the period since then, many more outside houses have been built in its last half than in the first, it is said; and every few months see a new addition. In August, 1916, more than a third of the families of Zuñi had given up residence in the town of their mothers.

¹ Of forty cases, twenty-seven, or two thirds, are clearly of this character; four, or only one tenth, are contrary, as from the south side of the pueblo to the northern environs; and the remainder are indeterminate, as from the west to the north, or from southwest to northwest.

² I am told that the last Navaho raid on the town took place during the birth of a woman who was pointed out to me and who appears to be fifty years or a little older. This would indicate 1865. Since then, the Zuñi and Navaho have only skirmished or ambushed one another in the country, the former declare. The last victory dance was held a few years ago over the scalp of a Navaho child found dead in the hills. This incident was not due to a recrudescence of the old hatred of the Navaho, for the two tribes visit and associate, but to a desire to maintain the ancient ceremony, for which an occasion is requisite.

SIZE OF CLANS AND FAMILIES.

The size of the Zuñi clans shows an even gradation from the largest to the smallest. The one conspicuous break is between the largest and the second largest clan. Pikchikwe comprises more than a quarter of the families and therefore presumably of the population of the town. It is thus no wonder that its subdivision into Raven and Macaw, or Dogwood and Raven-Macaw, is far more prominent in the native mind than the subdivision of any other clan. It is also conceivable that Pikchikwe may be a group of syncretized clans; and that a slight stimulus might suffice to break it apart even now.

220 families among 1664¹ people give an average of over seven and a half souls per household in Zuñi. This is higher than elsewhere in the Pueblo region. The data of Fewkes, Mindeleff-Stephen, and Starr, in their works elsewhere referred to, furnish an average of barely five.

	<i>Families or Houses</i>	<i>Population</i>	<i>Per House</i>
Oraibi	149	750	5
Mishongnovi	53	289	5.4
Shipaulovi	22	105	4.8
Walpi	57	205	3.6
Sichumovi	24	117	4.9
Hano	35	159	4.5
Cochiti	60	273	4.6

The greater size and congestion of Zuñi may have tended to a somewhat stronger tendency for a growing family to remain under one roof. But it would not be operative in the newer houses in the outskirts, which now hold over a third of the population, and would have but little influence in the eastern and more freely built half of the pueblo mass. The figures for the other towns are too uniformly smaller to allow the explanation to be dismissed that the basis of reckoning either of the natives or of enquirers has been different. The data at Hopi and Cochiti are based on prolonged and intimate acquaintance, or on an exact census, both of which a large population and a limited stay precluded at Zuñi.²

¹ Thirteenth U. S. Census, 1910. A count made for the Indian Office in 1916 is said to have yielded more than 1800 people.

² I first attempted the same study on the basis of Mindeleff's plot of Zuñi. My principal informant gave 171 families as compared with 191 families known to have lived within the pueblo and 139 still resident in it; a second, who proved far less reliable in detail and inclined to make obvious errors in identifying the map, listed 338. It was this enormous discrepancy that impressed me with the conviction that studies of this kind must be made on the spot and so far as possible for the present time, and that any attempt to secure accurate data as to the past distribution of population by means of a map, must be largely fruitless. It was this

I was at first inclined to believe that my informants had united a considerable number of adjacent families related in blood, and thus reduced the total and raised the average per household. But this error seems negligible; for my count is based on the compiled and corrected information of seven different informants, four of whom discussed maps 1 and 5, or 6 and 7 — on which most Zuñi readily find their bearings — while the other three walked the streets and roofs with me. It is true that a Zuñi "house" often contains what we should regard as two or three households; but as long as it includes only one used hearth, and all natives insist that the two or three households are a single one, it is impossible to do anything but accept their reckoning.

The figures which I obtained in clan censuses, two of which are detailed ¹ while the third seems reliable,² also corroborate closely.

	<i>Houses</i>	<i>Inhabitants</i>	<i>Per House</i>
All Zuñi	220	1664	7.56
Coyote clan	10	58	5.80
Tobacco clan	6	46	7.67
Badger clan	21	161	7.67

The average of about seven and one half persons per family, or half as many again as we reckon in civilized America, may therefore be accepted as substantially accurate for Zuñi of today.³

In any event, however, whether we have to deal with seven and a half or eight persons to the household as in Zuñi, or five as in the other pueblos and among ourselves, it is clear that the basis of the Pueblo family is substantially that of our own, and that the traditional formula so favored by ethnologists, of large, communal, matriarchal groups, is non-existent among these Indians.

KINSHIP IN THE CLAN.

It has already been stated that while the Zuñi apply kinship terms to all clan members, they distinguish clearly and promptly between blood kin and mere clan mates. A desideratum, not only at Zuñi, but among every

realization that led to the new survey on which the maps in the present paper are based. Mindeleff's plan looks tantalizingly like the outline of modern Zuñi; but, as mentioned elsewhere, I had difficulty in finding a dozen walls that still stood precisely where they were when he made his survey in 1881. Before my first summer in Zuñi was out, I had realized the extent to which rebuilding — voluntary and enforced — goes on in the course of a single season.

¹ Tables 7, 8.

² Table 9.

³ It is more likely to be an underestimate than an excessive figure: actually only 191 houses are known in the old town of 1600 or more people; while, as remarked, the 220 houses occupied in 1916 may shelter 1800 souls.

nation that possesses clans, is a knowledge of the degree to which kin and clan groups coincide or fail to coincide. It is quite inconceivable that the great Pikchikwe clan, with four to five hundred members, should consist wholly of people in a single line of descent, or if so, that they should still be able to trace the ramifications of their relationship. A small clan might however well be thus knit together in blood; and to test the matter, I obtained a count of the members of the Coyote and Tobacco groups, who own ten and six houses respectively.

TABLE 7.

CENSUS OF COYOTE CLAN.

No.	House	Person and Status	No. 1 Addresses As	Fraternity
1	184	Philip		Makkyetlannakwe
P	"	father of 1; his o. brother owned the house		
2	"	mother of 1, ex old Coyote house 434, went to her husband's family		Makkyetlannakwe
3	"	y. sister of 1		Makkyetlannakwe
Ba	"	husband of 3, ex 140 and 517e		
4	"	daughter of 3		
5	"	daughter of 3, younger than 4		
6	"	daughter of 3, younger than 5		
7	"	son of 3, younger than 6		
8	186	Emmalia (Emilia)	ikyinna	none
9	"	Charlie Pinto, o. brother of 8	pappa	none
10	"	Robert, o. brother of 8		none
12	"	mother of 8, ex 373	tsitta	none
14	"	K'ucci or Louie, son of younger sister of 12	pappa	
15	"	Allapo'a, younger brother of 14		Shuma'kwe
16	"	son of 8, boy	kyasse	
17	"	baby daughter of 8		
P	"	husband of 8		
Tk	"	husband of 12		
18	323	Nahtsi, young man	kyasse	none
19	"	mother of 18; ex 325	kyawwu	none
20	"	y. brother of 18		Shi'wanakwe
21	325	o. sister of 19		none
Tk	"	husband of 21		
22	"	son of 21, not married		none
23	"	y. brother of 22, at school		none
24	"	y. brother of 23		
25	"	y. sister of 24		
44	"	mother of 21		
26	440	Lhkila	kyasse	none
P	"	wife of 26, lives in his house		
P	"	baby daughter of 26		
27	"	y. brother of 26		none
28	"	mother of 26, widow of the Pekkwinne who died in 1915	tsitta-ts'anna	Chikkyalikwe
48	424	sister of 28, widow of P man	tsitta-Lacci*	Shi'wanakwe

* 29 calls them by the same terms, although 48 is his mother's younger sister (properly his tsitta-ts'anna) and 49 her daughter (properly his kyawwu).

TABLE 7 — (Continued).

No.	House	Person and Status	No. 1 Addresses As	Fraternity
49	424	daughter of 48	tsitta-ts'anna*	Shi'wanakwe
E	"	husband of 49		
Ba	"	Na'ucti, husband of 48		
†	"	daughter of 48		
30	"	"Lazy," son of a sister of 48, widower		Makkyets'annakwe
34	454a	daughter of sister of 33	ikyinna	none
P	"	husband of 34		
35	"	Tsanatsahtits'a, daughter of 34, unmarried	kyasse	none
36	"	y. sister of 35		none
37	"	y. sister of 36		none
39	"	y. sister of 37		
38	"	y. brother of 39		
40	"	baby daughter of 38		
43	369	Uppekwinne, old man, blind	nanna	Uhhuhukwe ‡
42	"	y. sister of 43, old woman	hotta	none
†	"	y. sister of 42		none
†	"	o. brother of 42		
†	373	old woman; on her death her son, 13, sold the house to a Cn family		
47	528b	y. sister of 46. Childless	kyasse	Peshatsillokwe
F	"	husband of 47		
F	"	daughter of sister of husband of 47		
51	580	Margaret A. Lewis, <i>Cherokee</i> wolf clan		none
	"	her husband, Governor Lewis, ex 333		none
52	"	Margaret, daughter of 51		
53	"	Tei'pai'u, y. brother of 52		
54	"	Billy, y. brother of 53		
55	"	Robert, y. brother of 54		
33	194	Camminapti, brother of mother of 34; ex 454a; wife P	kyakkyia	Makkyets'annakwe
50	196	Kyetits'a, o. brother of 8; ex 186; wife, Be		none
11	175	K'e'ni, y. brother of 8; ex 186; wife S		

* 29 calls them by the same terms, although 48 is his mother's younger sister (properly his tsitta-ts'anna) and 49 her daughter (properly his kyawwu).

‡ Pekkwinne of his fraternity, whence his name.

TABLE 7.—(Concluded).

No.	House	Person and Status	No. 1 Addresses As	Fraternity
32	120	Yakki, "nanna" of 29; ex 424; wife, M	nanna	none
†	104	Patchappa, y. br. of 32; ex 424; wife M		
29	3	Piwwanihka, son of a dead sister of 48; ex 424; wife, E	kyasse**	none
31	575	Pe'ussi, brother of 28; ex 440; wife E	kyakkya	Hallokwe
41	519	Nakya'ti, o. brother of 34; ex 454a; wife Cr	pappa	Peshatsillokwe
46	536	Wai'tiwa, o. brother of 19 and 47; ex 323; wife P	kyakkya	none
45	137	Mats'a, sister's son of 43; ex 369; wife Cr	pappa	Uhhuhukwe
13	167	Tsa'wela or Tsu'pila, ex 186, younger brother of 12; wife P	kyakkya	Sanniakyakwe and Apitlashiwanni ‡‡
	249	Family in 454a		

** 1 calls the wife of 29 ikyinna.

‡‡ Head bow priest.

In summary we have: —

House	Coyote Clan	Other Clans	Married Out
184	7	2	—
186	8	2	3
323	3	—	1
325	6	1	—
440	3	2	1
424	3	2	3
454a	7	1	2
369	2	—	1
538b	1	2	—
580	5	1	—
	45	13	11

In other words, there are fifty-six members of the Coyote clan; and fifty-eight actual inmates of the ten Coyote houses in the town.

All attempts to connect even the bulk of these families into one or two groups of blood kindred, were fruitless. Outsiders denied relationship of most of the houses as explicitly as the Coyote informant. From the Zuñi point of view, the clan consists of the following kin groups: —

- I. 184; ex 434
- II. 186; ex 373
- III. 323, 325, 538b; ex 325
- IV. 440
- V. 424
- VI. 454a; ex 249
- VII. 369
- VIII. 580

As the ruin 434 adjoins house 440, I suspect a common origin; but my informants deny this. 424 is almost in contact, so that blood connection is not unlikely. This might make one original group.

373, from which 186 issued, is just across the street from 323-325, and both are at the eastern edge of the town; while 369 is only a few doors distant, on the street which separates them. Again one is tempted to go behind the returns and suspect an outgrowth from a single stem.

454a, out of 249, seems to stand alone. This house furnishes an example of the caution which must be exercised in inferring original kinship from nearness of houses. 454a is only a short distance from 184, which in turn is almost adjacent to 186. Yet the three families come respectively out of the southern, the southeastern, and the northeastern blocks. What has happened in recent years, is likely, in only little less measure, to have happened fifty, a hundred, or two hundred years ago.

580 also illustrates the complexity of strains in even small clans. The civilized and educated woman who is married to the present governor of Zuñi, is, through her mother, of the Cherokee wolf clan. As a member of the community, it was taken for granted by the Zuñi that she must be a member of one of their clans — obviously the Coyote. In a generation or two there will scarcely be even a consciousness, among the Zuñi at large, that that part of the clan which her progeny constitutes, is of alien origin. The same thing must have occurred time and again, generations and centuries ago, through women of Hopi, Acoma, Laguna, Navaho, and more distant tribes settling among the Zuñi. Such events may have been rare. But now and then a famine, or the suspicion of witchcraft at home, would drive an individual, a family, or a group of households, to a distant pueblo. Girl captives were kept occasionally, or bought from the Navaho or Apache; and sometimes a woman would follow a visiting lover back to his home.

At best then, we can speculatively reduce the ten families that comprise the Zuñi Coyote clan to four lineages; the truth perhaps lies between this number and the eight groups that the natives recognize. Two things are evident. First, the Zuñi do not ordinarily carry relationship back very far, even within the clan. And second, clan and kin are distinct things, one rather lightly superimposed on the other.

TABLE 8.

CENSUS OF TOBACCO CLAN.

No.	House	Persons and Status	Fraternity
2	72	female parallel cousin of 13, also of a P father	none
3	"	older brother of 2	Makkyetlannakwe
4	"	older brother of 2	none
Tk	"	husband of 2	[Makkyetlannakwe]
Cn	"	husband of dead sister of mother of 2	[Makkyetlannakwe medicine head]
S	"	daughter of 3, whose S wife married into his house, but left him	
11	557	grandmother of 12, 13, 14, 15; ex 72	none
13	"	daughter's daughter of 11, daughter of the (P) pekkwinne who died in 1915; ex 72	none
14	"	younger sister of 13	none
15	"	younger brother of 14, unmarried	
Cr?	"	husband of 13	[none]
P	"	husband of 14	[none]
22	"	boy, son of 13	
23	"	boy, son of 14	
12	561	older sister of 13, 14, 15; ex 557	Makkyetlannakwe
P	"	husband of 12	[none]
19	"	girl, daughter of 12	
20	"	boy, son of 12	
21	"	girl, daughter of 12	
17	"	Nolatsa, son of 11 by P father, kyakkya of 12, 13, 14, 15	[none]
18	"	Jo, older brother of 17, kyakkya-Lacci of 12, 13, 14, 15	Shuma'kwe
5	"	Te'les; had Ba father; sister of 34; ex 223	none
6	"	daughter of 5, by M father	Makkyets'annakwe
7	"	daughter of 5	Makkyets'annakwe
8	"	son of 5, unmarried	none
E	"	husband of 6	[none]
Cn	"	husband of 7	[none]
9	"	boy, son of 6	
10	"	boy, son of 7	
34	549a	sister of 5, ex 223	none
35	"	daughter of 34	none
36	"	daughter of 34	Shi'wanakwe
P	"	husband of 34	[none]
37	"	older brother of 34	Shi'wanakwe
38	"	older brother — pappa-Lacci — of 34 and 37	Hallokwe; and pekkwinne of Lewwekwe
24	558	woman; S father; ex 223, but from separate room in rear	none

TABLE 8—(Concluded).

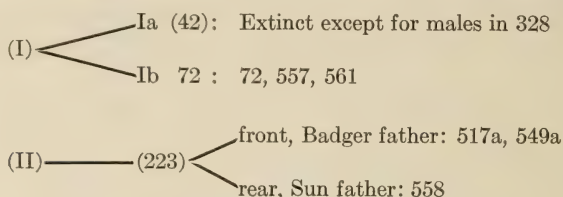
No.	House	Persons and States	Fraternity
25	558	daughter of 24	none
26	"	younger sister of 24	none
27	"	daughter of 26	Hallokwe
28	"	daughter of 23	none
29	"	son of 24	Hallokwe
30	"	son of 24	none
E	"	husband of 24	[none]
Cn	"	husband of 25	[Makkyetlannakwe]
Cn	"	husband of 27	[none]
31	"	boy, son of 27	
1	328	Kyallatsillo, P father; originally ex 42, which now belongs to 72; his people seem to have moved to 328, or to a former Tb house adjoining 328 on the west; his P wife married into his house	Shuma'kwe
39	"	Pa'tela; kyassee of 1; his mother's mother and the mother of 1 were sisters. An associate shiwwanni	none
16	526a	Tomasito, older brother of 12, 13, 14, 15, ex 72; married in Tk house	none
32	164	Tcuyati, younger brother of 24, ex 223 rear; married in P house	Makkyets'annakwe
33	292	Kuyahti, older brother of 24, ex 223 rear; married in P house	Hallokwe head
40	534e	Annie, daughter of 24, married in her husband's P house	none [husband Hallokwe]
41	534e	boy, son of 40	
42	534e	girl, daughter of 40	

This clan summarizes as follows: —

House	Tobacco Clan	Other Clans	Total
72	3	3	6
517a	6	2	8
561	6	1	7
557	6	2	8
558	8	3	11
549a	5	1	6
	—	—	—
	34	12	46
In 328 or married out	8		
	—		
Total Tobacco people	42		

It is possible that a few Tobacco men married into other houses have been overlooked; but there are not likely to be many, since twenty-two of the known forty-two clan members are males.

This clan reduces to fewer blood lineages than the last, even allowing for its smaller size. All its members trace back to the three Tobacco houses recognized in the old town; and as two of these are adjacent, we are almost certainly justified in connecting them and reducing the lineages to two.



Both this clan and the last are below the average of Zuñi clans in size; but as Zuñi is by far the largest of all modern pueblos, they approximate clans of normal or superior strength in other towns.

The known marriages contracted by living and former members of the two clans aggregate thus:—

	<i>Coyote</i>	<i>Tobacco</i>
Pikchikwe	7	11
Eagle	3	2
Badger	2	1
Sun	1	2
Turkey	2	2
Corn	—	4
Crane	3	1
Frog	1	—
Tansy Mustard	2	1
Bear	1	—
	<hr/> 22	<hr/> 24

This is about as might be expected, except for the excess of Pikchikwe marriages. The proclivity of Tobacco people to contract marriages with this clan, even when they themselves are paternally connected with it, has already been commented on.

I add also a summary of the Badger clan, for such value as it may have in populational considerations, although the list of members was not taken in sufficient detail to bear on the question of the kin groups involved. It will be seen that the number of persons of other clans married into Badger houses is exactly the same as that of Badger people married out of their natal homes; which is of course as it should be, normally.

TABLE 9.
THE BADGER CLAN.

Block	House Number	Badger Inmates	Other Inmates	Former Badger Inmates Married Out
Main	77	7	1	4
	52	5	1	1
	25	6	1	—
	94	2	—	6
	95	6	—	—
	106	1	—	3
Southwest	206	13	1	3
	214	4	4	1
	226	4	1	—
South	247	10	3	1
	252	9	2	—
Southeast	387	13	4	3
	378	5	1	4
	384	5	1	2
	394	2	4	2
	442	8	3	—
Outside	517e	6	2	2
	534c	4	1	—
	537b	8	2	—
	538a	3	2	3
	555a	4	2	1
Once Ba, now P		125	36	36
	68	2	6	—
		127	42	36

CLAN HEADS.

The Zuñi as invariably denied to me that there were any authoritative or nominal heads of clans as they rejected the idea of a council or other machinery for the transaction of clan business; and however indirectly I approached the subject, its prosecution remained fruitless. There is only one exception. In counting the Badger clan people, as just listed, I learned that while there was no mossonna or mossiye, that is, head, for the clan, the people of house 247 were known as tonnashikwe ashi'i or ashi'ye,

"badger people name having" or "badger people named." A little girl in this house was customarily referred to throughout the pueblo as tonnashikwe ts'anna, "the little badger person." Further inquiry elicited corresponding houses for most of the clans; as follows:—

Pikchikwe	house 454
Eagle	506
Badger	247
Sun	518
Turkey	398
Corn	38
Crane	286, ex 333
Frog	181
Coyote	369
Tansy Mustard	120
Tobacco	558, ex 223
Bear	534, ex 33
Deer	81

In discussing the matter, my informants came gradually to use the word *moissiye* as well as *ashi'i*, but apparently applied it in a figurative sense, much as we might speak of a social leader; since they refused to admit any privilege possessed by the families in question. As the governor, who was one of my authorities, has relatives in two of the houses named, 286 and 81, he would have been certain to be aware of any rights or specific honors due to the inhabitants of these houses. The only explanation given for the designations was that they were names, applied without definite reason other than perhaps in a half jocular spirit, or the convenience of a generic epithet over the enumerating of personal names. I am inclined to see in the practice an additional manifestation of the same tendency that causes the *teknonymic* substitution of kinship terms for actual individual appellations whenever possible.

It is also clear that a number of the clan named houses are those which contain the clan fetishes, as listed in table 12. This applies to Eagle, Turkey, Corn, Crane, and Deer. It is not so however, at least for the present time, for Pikchikwe, Sun, Frog, Coyote, and Tansy Mustard.

THE PUEBLO CLAN SYSTEM.

At first sight, the clans represented at Zuñi seem to be largely different from those of the Hopi, or of the nearest people on the other side, the Keres of Acoma and Laguna. The foremost Zuñi clan, the Dogwood, is without direct parallel in any pueblo. Important Hopi clans or clan groups, such

as the Snake, Horn, Flute, Squash, Raincloud, Lizard, Sand, Kachina, and Reed, are unrepresented at Zuñi; while on the Rio Grande, there are Mountain-lion, Pine, Cottonwood, Fire, Hawk, Ant, Buffalo, Calabash, Oak, Moon, Turquoise, and other clans that sound strange to one familiar with Zuñi conditions.

Nevertheless, the discrepancies are superficial, and mainly due to a peculiar native method of nomenclature. Once this has been penetrated, it becomes clear that in essentials a single system of clan organization pervades all of the pueblos, from Oraibi to Taos.

SCHEME.

The key is to be found in Dr. Fewkes's "Tusayan Migration Traditions,"¹ supplemented by the valuable A. M. Stephen material compiled by Cosmos Mindeleff.² Both these authors classify the Hopi gentile groups into phratries and clans, and even super-phratries or sub-clans; and the two full lists prove to connect nearly every recorded Zuñi, Keres, and Tanoan clan not only with the Hopi system but among each other. The Hopi themselves are indirectly responsible for the fact that these interconnections of a single system have been overlooked. In their minds, their clan classification seems to be thoroughly interwoven with origin and migration legends. It is the latter element that has particularly appealed to the ethnologists who gathered Hopi clan data, with the result that the eagerness to explain origins has led them to stress every possible fragment of evidence bearing on what the Hopi social system might have been a few centuries ago, at the expense of overlooking its essential features today and its obvious connections with other Pueblo organizations. Not all students of the Southwest have accepted these historic or pseudo-historic interpretations. Some in fact have viewed them with hostile bias. But their promulgation raised an issue around which opinion, whether published or withheld, seems to have crystallized, to the disregard, for many years, of nearly all interpretations of the existing conditions. There is in this case a remarkable exemplification of the fatal check to knowledge invariably dealt to studies in the field of civilization when the temptation of seeking specific origins is yielded to and the path of merely but deeply understanding phenomena is abandoned.

This is the key provided by Dr. Fewkes:³—

¹ Ann. Rep. Bur. Am. Ethn., XIX, 577-633, 1900.

² *Ibid.*, XIX, 639-653, 1900; VIII, 16-41, 1891.

³ Pp. 582-584.

A. Hopi Clans from the North.

Tciia or *Snake group*: Snake, Puma, Dove, Cactus, Opuntia Cactus, Nabovu. Stephen¹ adds another variety of Cactus, Marmot, Skunk, Raccoon.

Ala or *Horn clans of the Ala-Leñya group*: Horn, Deer, Antelope, Tcaizra. "The Ant clans (Anu, Tokoanu, Wukoanu, and Ciwanu) belong to this group, but the author is in doubt whether to assign them to the Ala or the Leñya division." Stephen adds Mountain Sheep.

B. Hopi Clans from the South.

Patuñ or *Squash group*: Squash, Crane, Pigeon-hawk, Sorrow-making.

Leñya or *Flute clans of the Ala-Leñya group*: Blue-flute, Drab-flute, Flute, Mountain Sheep.

Patki or *Raincloud group*: Raincloud, Maize, Rainbow, Lightning, Agave,² Bigelovia, Aquatic Animal, Frog, Tadpole. Stephen adds Rain, Bean, Watermelon, and, elsewhere, Snow.³

Tüwa-Kükütc or *Sand-Lizard group*: Sand, Lizard, Flower or Bush. Stephen adds three further species of lizards, White Sand, and Mud.

Tabo-Piba or *Rabbit-Tobacco group*: Rabbit, Hare, Tobacco. Stephen adds Pipe.

C. Hopi Clans from the East.

Honau or *Bear group*: Bear, Wildcat, Bluebird, Spider. Stephen adds Fir and elsewhere Rope.⁴

Asa or *Tansy-Mustard* or *Tcawkaina group*: Tcawkaina (a Kacina),⁵ Road-runner or Pheasant, Magpie, Bunting. Stephen adds Throwing Stick, Field Mouse, and Oak, and gives Chaparral Cock as alternative of Road-runner.

Kacina or *Masked Dancer group*: Kacina, Crow, Parrot, Yellow Bird, Spruce, Cottonwood.

Kokop or *Firewood group*: Firewood, Coyote, Wolf, Yellow Fox, Gray Fox, Zrohono, Death God, Eototo, Piñon, Juniper, Bow, Tüvatci Bird, Sikyatci Bird.⁶

Pakab or *Reed group*: Reed or Arrow, Eagle, Hawk, Turkey, Sun, Püükoñ War God, Palaña War God, Cohu. Stephen adds Chicken Hawk, Willow, Greasewood.

Honani or *Badger group*: Badger, Porcupine, Buzzard, Butterfly, Kacina (*sic*). Stephen adds Evening Primrose and Medicine, and elsewhere replaces Butterfly by Moth.⁷

The Owl and Bat or *Batkin clans* of Stephen⁸ are not placed in any group.

Dr. Fewkes never mentions most of these "clans" again, and his personal census of Walpi and Sichumovi in the same essay is substantially on the basis of the clan groups or "phratries." It is plain why this is so: 78

¹ Pp. 38-39.

² Perhaps the "Mescal Cake" of *ibid.*, xix, 651.

³ *Ibid.*

⁴ *Ibid.*

⁵ Chakkwena is a masked impersonator at Zuñi.

⁶ Sikyatci is also given for Yellow Bird in the Kacina group.

⁷ xix, 651.

⁸ *Ibid.*

clans among the 322 people of two towns would be an absurdity. The number of souls per clan would be less than we reckon per household. In the same way, Stephen in his earlier classification ¹ lists 57 clans, which do not exhaust the number; ² but the subsequent tabulation ³ of the families or houses of five of the six Hopi towns refers to only 34. How these discrepancies, which are so obviously full of some kind of meaning, came to be passed over as trivial, appears from a statement by Mindeleff: ⁴—

The table does not show the condition of these organizations in the present community but as they appear in the traditional accounts of their coming to Tusayan, although representatives of most of them can still be found in the various villages.

In other words, how a society is organized today was of little interest or moment compared with what its organization may have been a thousand years ago; and the facts at hand were neglected in favor of speculation on those beyond reach.

TABLE 10.⁵SYSTEM OF PUEBLO CLANS.¹

(* Extinct)

	<i>Generic</i>	<i>Hopi</i>	<i>Zuñi</i>	<i>Keres</i>	<i>Tanoan</i>
1.	a. Rattlesnake	Rattlesnake ^{1a}	*Rattlesnake	Rattlesnake	
	b. Panther	Cactus		Dove Panther	Panther
2.	a. Deer	Horn	Deer	Deer	Deer
	b. Antelope	Flute Red Ant	(Antelope) ²	*Elk Antelope Ant Buffalo ³	Antelope Ant Buffalo ³
3.	a. Squash	Squash	(Squash) ⁴	Gourd ³	Gourd ³
	b. Crane	Crane	Crane	Crane Duck ³	Goose ³

¹ VIII, 38-39.² "For example, in 'corn' can be found families claiming to be of the root, stem, leaf, ear, blossom, etc., all belonging to corn."³ XIX, 651.⁴ VIII, 38.⁵ See pp. 139 and 140 for footnotes in Table 10.

TABLE 10—(Continued).

	Generic	Hopi	Zuñi	Keres	Tanoan
4.	a. Cloud	Cloud Snow	Water ⁵ Frog Sky ³	*Cloud Water Frog Sky ³	Cloud Water
	b. Corn ⁶	Corn Bigelovia Agave-Mescal	Corn	Corn	Corn
5.	a. Lizard	Lizard	—	Lizard	Lizard
	b. Earth	Earth ⁷	—	Earth	Earth
6.	a. Rabbit	Rabbit	*Rabbit		
	b. Tobacco	Tobacco	Tobacco	Tobacco	Tobacco
7.	a. Tansy-Mustard	Tansy-Mustard	Tansy-Mustard	Oak	Oak
	b. Chaparral Cock		Chaparral Cock	Chaparral Cock	
8.	Kachina	Kachina-Crow	Dogwood ⁸	Kachina ⁹	
	a Raven		Raven-Crow	Crow	Crow
	b Macaw	Macaw ¹⁰	Macaw	Macaw	Macaw
	c Pine				Pine-Spruce
	d Cottonwood	¹⁰		Cottonwood "Mexican Sage" ¹¹	Cottonwood
9.	a. Firewood	Firewood ¹² Owl ¹³	*Wood	Fire	Fire-Firewood
	b. Coyote	Coyote Bow	Coyote	Piñon Coyote ¹⁴	Coyote Wolf
10.	a. Arrow	Arrow ¹⁵		*Arrow	
	b. Sun	Sun	Sun	Sun	Willow Sun
	c. Eagle	Eagle	Eagle	*Moon ³ Eagle	Moon ³ Eagle
	d. Turkey	Hawk	Turkey	Turkey- *Hawk	*Turkey-Hawk

TABLE 10 — (Concluded).

	<i>Generic</i>	<i>Hopi</i>	<i>Zuñi</i>	<i>Keres</i>	<i>Tanoan</i>
11.	a. Badger	Badger	Badger ¹⁶	Badger	Badger
	b. Bear ¹⁷	Moth- Butterfly Bear Spider Rope	Bear	Bear	Bear Bluebird
12.	a. Turquoise ¹⁸	19	———	Turquoise	Turquoise
	b. Shell- Coral	19	———	Shell-Coral	Shell-Coral
	<i>Unplaced:</i>	Bat	Yellow Wood	*Stone "Ivy" Salt Sage	Stone Grass
					And a few others, mostly of doubtful authenticity and reported from single pueblos

¹ It must be borne in mind that this table includes only clans listed by some authority as actually occurring, under the names in question, in some pueblo of each group. The principal source is F. W. Hodge's valuable table of Pueblo Indian clans in *American Anthropologist*, old series, ix, 345-352, 1896. The Hopi synonyms have been used to identify clans that appear dissimilar in the several localities; but have not themselves been inserted, except when specifically mentioned in one of the Hopi censuses. There are Dove and Panther clans in Keresan towns: at Hopi only Rattlesnake and Cactus are listed, with Dove and Panther as synonyms or sub-clans. All the identifications rest upon definite data of this sort, with the exception of a few rather obvious connections, which are mentioned in the notes as being conjectural.

^{1a} The word means "rattlesnake" in Hopi and other Shoshonean dialects.

² The town at Zuñi before 1680 was called "ant-place;" in fact the modern town is still sometimes so referred to; and there is an ant fraternity.

³ The placing of the Buffalo, Gourd or Calabash, Duck-Goose, Sky, and Moon clans in the table rests upon tentative guesses by the author, and not upon any known native classification.

⁴ Represented by a Crane clan subdivision, Mokyissikwe, a tapering striped pumpkin.

⁵ Mentioned by Cushing as extinct. I was told of the Miky'annakwe or Corn-ear Water people as a sub-clan of Corn.

⁶ With subdivisions as to color which have been disregarded here.

⁷ Fewkes and Mindeleff both give "sand," but comparative vocabularies show the word to have the more generic meaning of "earth" also.

⁸ The Kyakkwemossi or highest priest, and the Pekkwinne or "speaker" for the sun, the two ranking officials in the Ko-tikkyanne or god-fraternity of Zuñi, the basic tribal religious organization corresponding to the Hopi Kachina society, "which includes all males"

The fundamental inference from the presentation of the available knowledge as arranged in Table 10 is that a single, precise scheme pervades the clan organization of all the Pueblos. It is almost as if one complete pattern had been stamped upon the social life of every community in the area. I should never have suspected such an exact formulation to be inherent in the seemingly endlessly discordant data; and it appears that Mr. Hodge, Dr. Fewkes, and other investigators who have contributed most to the subject, have been equally without realization of the degree of coördination that prevails through the Pueblo region.

To mention only one example, the scheme of Cochiti gentile organization, which we know accurately from Starr's census, agrees remarkably with the Zuñi one. If "extinct" clans are included, the same clan-pairs are

(Fewkes, xix, 623, 1900) must be Dogwood. At least this is required for the Pekkwinne; the Kyakkwemossi may be of another clan provided his father was Dogwood. The Zuñi know the word *Kachina* but consider it Mexican and never employ it among themselves. The native equivalent is *Kokko*, stem *ko-*, which means god, impersonator of a god, or mask.—This fragment of ritualistic law would be sufficient to connect the Zuñi Dogwood clan with the Hopi *Kachina* "phratry" even without the complete identification given by the Zuñi Raven and Macaw subdivisions and the Hopi Crow and Parrot synonyms; not to mention that the Zuñi "*Kokkokwe*" subdivision probably means "god-people" or "*Kachina*-people" rather than "raven-people."

⁹ "Dance kilt."

¹⁰ Represented in the Hopi region among the Tanoan Hano, but not among the Hopi themselves.

¹¹ Hodge: Cochiti, "Washpa, Dance-kilt"; Starr, *Proc. Davenport Acad. Sc.*, vii, 42, 1899, "Huashpa, Mexican Sage." This raises the conjecture whether Sage, and possibly "Ivy," may not also go into the *Kachina* group.

¹² The words for "fire" and "wood" are from the same stem *ko-* or *ku-* in nearly all Shoshonean languages.

¹³ *Bur. Am. Ethn., Ann. Rep.*, viii, 105, 1891; "*Kokop*, Burrowing Owl." *Ibid.*, xix, 584, 1900: "*Kokop*, Firewood." The latter is the correct translation.

¹⁴ John G. Bourke gives an instance that is probably characteristic of the Pueblo point of view as to clan identifications. "There were found representatives of two distinct Coyote gentes: a husband, who called himself a Coyote del Sol, and his wife, who was a Coyote del Chamisa (Sage Brush), the Coyote Clan of the ruined pueblo of Cicuye, or Pecos, amalgamated with Jemez, and so called for distinction." *Journ. Am. Folk-Lore*, iii, 117, 1890.

¹⁵ Fewkes and Mindeleff usually: "reed." The native word means "reed," "cane," or "arrow" in a number of Shoshonean dialects, as *co'le* does in Zuñi. Stephen associates the Reed clan with Cloud-Corn-Lizard-Tobacco instead of Sun-Eagle: xix, 651.

¹⁶ *Pettiskowakwe*, Bent Over Straw, and *Huhtetcikwe*, a plant resembling a sunflower, synonyms of a Zuñi Badger sub-clan, may lead to new inclusions in the Badger-Bear group. Compare Stephen's Hopi Evening Primrose and Medicine.

¹⁷ The fact that Bear and Badger were the only clans found in all four Pueblo groups without being coupled with other widespread clans led me to believe that they might form a pair, even though none of the Hopi sources associate them. Dr. R. H. Lowie informs me that his Walpi-Sichumovi informants in 1915 regarded Grizzly Bear and Butterfly as synonyms of one clan. This establishes the suspected coupling, since Butterfly also identifies with Badger.

¹⁸ Somehow it is difficult to refrain from the conviction that the Turquoise-Shell group will identify with the *Kachina* complex, though there is nothing specific in favor of such a view. There is not even any direct evidence to justify the coupling of Turquoise with Shell-Coral.

¹⁹ Extinct among the Hano, and not reported from the Hopi.

represented and unrepresented, except for Turquoise-Shell and Rabbit-Tobacco.

<i>Zuñi</i>	<i>Cochiti</i>
{ *Rattlesnake	{ *Rattlesnake
{ Deer	{ *Panther
{ Antelope	{ *Elk
{ Crane	{ *Antelope
{ Frog ¹	{ Gourd
{ Corn	{ Water
{	{ Corn
{	{
{ Rabbit	{
{ Tobacco	{
{ Tansy-Mustard	{ Scrub-oak
{ Chaparral Cock	{
{ Dogwood	{ Kachina-Mexican Sage
{	{ Cottonwood
{ *Wood	{ *Fire-Firewood
{ Coyote	{ Coyote
{	{
{ Sun	{ Sun
{ Eagle	{ *Eagle
{ Turkey	{ *Turkey
{ Badger	{
{ Bear	{ *Bear
{	{ Turquoise
<hr/>	
Yellow-wood	Ivy
	Sage

HISTORICAL INFERENCES.

A conclusion that cannot be avoided is that the quasi-historical deductions of Stephen, Fewkes, and Cosmos Mindeleff, as to the origin of Hopi clans and towns, fall to the ground. It is inconceivable that the elements

¹ Bourke in his list of Zuñi gentes gives "Water" in place of "Frog." Journ. Am. Folk-Lore, III, 116, 1890.

of population represented in the modern Rattlesnake and Horn clans should have come to the Hopi from the Paiute in the north, or those in the Squash-Crane and Corn-Cloud groups from the Pima in the south, when all these clans are equally and similarly represented in the Rio Grande pueblos, which are supposed to have furnished only the Bear, Badger, Coyote, Eagle, Kachina, and related elements.

These pseudo-histories of course are theoretically assailable on the ground that they posit a former social condition utterly unlike that obtaining today among the Hopi or Pueblos in general or any neighboring tribes. The whole nature of the existing clans among the Indians of the Southwest is that of a part in a whole, an organ in a body. The native legends that the world has been asked to accept as authentic and to weave into its fabric of universal history, depict the Hopi clans as once communities in themselves. All the Snake people lived together, all the Corn people in another place, and the one community was all Snake and the other all Corn without exogamic divisions corresponding to clans. In other words, each organ was once a body maintaining an independent existence with self sufficient functions; and the present unitary body is an agglomeration of such former separate bodies, which somehow have sunk to be merely organs.

The formula of thought which is involved in such a concept, is one that has been applied in ethnology a thousand times. First, according to this formula, there was a status radically different from the known one, but substantially stable. Then came a period of change, the mechanism of which is either ignored or also taken for granted. And finally the present condition of conservative equilibrium is reached, the forces working for alteration ceasing as obediently as their operation commenced mysteriously. This method of reasoning must contain an extraordinary power of fascination, or it would not have been attempted so often. It is difficult to decide whether the prevalence of such arguments is due rather to the misapplication, to civilizational facts, of mental processes justified in other fields of science by their success; or to an essentially naïve way of thinking. It is certain, however, that in all cases in which we have actual knowledge of changes in civilization, these changes do not take place in this manner; so that the formula may fairly be described as incompatible with a historical or social point of view.

POLARITY.

A characteristic and remarkable feature that runs right through the Pueblo clan system is the grouping of clans in pairs, or perhaps a tendency toward polarity within what is really one clan. This is very prominent among the Hopi, and confirmed by the Zuñi Raven-Macaw and Deer-

Antelope groups, as well as by the Zuñi tendency to recognize only pairs or fours of sub-clans, however nominal these may be. It is not directly established for the Keresan and Tanoan communities, but appears probable from the fact that the same pairs frequently recur as among the Hopi and Zuñi. This point seems a most fruitful one for investigation in the social life of the Rio Grande communities; but it must be pointed out that it is scarcely soluble without detailed data that involve the relation of individuals to the groups.

It is possible that this clan polarity is the basis of such moiety organization as exists among the Pueblos, and certain that the two phenomena are sufficiently similar to be fully understood only in connection with each other. It is strange that there has been no allusion to moieties among the Hopi, and no indication of their existence with the Zuñi except in mythology, while among the Keres and Tano modern authorities picture them as entering deeply into the life of the people. Several explanations of this discrepancy are possible. The special stimulus to which the Rio Grande pueblos were subjected by the enormously greater influence of the Spaniards upon them, has certainly been a factor of some sort. It may have caused a decadence of the clan and a corresponding exaltation of the moiety as an institution at the expense of the clan. But in this event the problem becomes what the native basis of this moiety development may have been. It is possible that moieties with political and ritualistic functions already existed on the Rio Grande without an equivalent importance at Zuñi and among the Hopi, and that the Tanoan and Keresan communities merely magnified an institution that they already possessed. It is theoretically conceivable that they had moieties with exogamic functions, though this is rendered very unlikely by the absence of any evidence of exogamic moieties among the Keresan people of Cochiti twenty years ago, as already discussed. It is also possible that the Rio Grande communities merely took over the idea of polarity from their clans, and extended it, from causes that are obscure but with which the presence of the Spaniard might be connected, to their towns. It does not appear that a present answer can be given to these questions; but they do not seem insoluble.

The nature of the symbolism involved in the clan duality or polarity is interesting, but no single consistent principle has yet become apparent. Rattlesnake and Panther, for instance, are both dangerous biting animals, and Cactus may be connected with them because its spine resembles a snake's tooth; but the association with these of Dove is obscure. Badger and Bear are similar animals, but it is not clear why Butterfly and Spider and Bluebird should be connected with them, although the linking of Rope with Spider is symbolically intelligible. Deer, Antelope, and the other horned animals form a natural group. The connection between Cloud or

Water and Corn is of course also fundamental in all aspects of Southwestern life. Squash and Crane may be a variant of the same association: the water bird is connected with an agricultural product. Even Lizard and Earth may possibly have an element in common, in the opposite idea of dryness. But what concept lies at the bottom of the linking of Rabbit with Tobacco, of Firewood with Coyote, of Ant with Deer-Antelope, and of a number of other groups, is as yet a complete mystery, whose elucidation will shed light on Pueblo esoteric thinking as well as social organization.

The opportunity to question an old Hopi who has been married at Zuñi since before Cushing's time, or about forty years, allowed me to put to a partial test the foregoing Pueblo clan system. The outcome shows considerable deviation from my reconstructed scheme; but it also evidences tolerable agreements, besides establishing two points: first, that the Pueblo Indians take for granted the identity of each other's clans; and second, that polarity is a distinctive trait of the Hopi concept of clans, while more foreign to the Zuñi mind.

My informant began by insisting that Hopi and Zuñi clans were identical. In substantiation, he gave a list of fourteen Hopi equivalents. Yellow Wood having been omitted by him, he replied to a question that this clan was not Hopi. This accords with its position in the foregoing theoretical table. Asked as to Hopi clans unknown to the Zuñi, he mentioned a few, but equated each with a clan already cited by him. He then affirmed that each Hopi clan had two names, but was a single body; and completed his second list on this basis of pure synonymy. These are his data in full, and in the order of mention:

<i>Zuñi</i>	<i>First Hopi Name</i>	<i>Second Hopi Name</i>
Badger	Honani	Ngahü or Ngayahü, roots dug by the badger
Sun	Tawa	Paho, prayer plume
Eagle	Kwa	Kotika, its nest
Pikchikwe	Pakap (reed)	Kyaji, macaw
Crane	Akok	(none)
Coyote	Isi	Mahsawü, ghost [Zuñi: happa]
Corn	Paki	O'omahtü, "rain"
Turkey	Kuyungu	Paho, prayer plume, because its feathers are used for these objects
Bear	Hon	Chüshi, bluebird
Frog	Pati	Patüpha, "rain"
Tobacco	Pipa	Tap, cottontail rabbit
Chaparral Cock	Hospo	Natekiyünga, "hides quickly, invisible"
Tansy Mustard	Asa	Astekükpü, "dried remains in a dish" [Zuñi: he'letonne]
Deer, Antelope	Ala	Tsüpü, antelope

All the above first names were given with the suffix *-nyamü*, which appears to be equivalent to Zuñi *-kwe*, "people." When asked the meaning of *wingwü*, the informant equated it with Zuñi *annota*, "clan"; but he did not employ the term.

I have little hesitation in predicting the identifications of Pakap, reed, with Pikchikwe, and possibly others, to be erroneous even from the native point of view. But the equation of Bear and Bluebird, and of Tobacco and Rabbit, is in accord with previous data; and the occurrence of Paho as a second name for both Sun and Turkey, corroborates the connection of these two clans in a most satisfying manner. At any rate, rough as these data are, they give some measure of support to the generic contentions here advanced; and above all, indicate the rich though complicated results that await the prosecution of comparative field studies among the Southwestern tribes.¹

¹ Though without direct bearing on the matter in hand, and probably far from errorless, I add the following religious equations by the same informant and a few made by an old Zuñi who had lived at Laguna.

Zuñi	Hopi	Laguna
<i>Fraternities</i>		
Ne'wekwe	Tatawa-kyamü	Kacaili
Lewwekwe	Nacotañwi-kyamü	[exists, name forgotten]
K'ocikwe	Icúwiwim-kyamü	I'pani is similar
[Me'ululu, nearly like Makkyets'annakwe]	Wüwütcim-tü	
_____	A'al-tü [sic]	
[Payatamu tikkyanne]	Lelen-tü	
_____	Kwa'kwan-tü	
[Rattlesnake, not Zuñi]	Tcúwüwim-kyamü, Tcú'tcú-tü	
Apiłaciwanni	_____	U'pi
_____	Yaya'wiwiñ-kyamü, jugglers who leaped from high places and were restored to life	
_____	Mamejoh-tü, women	
_____	Lalekon-tü, women	
_____	U'waküc-tü, women	
Makkyetannakwe		Hakani
Sanniakyakwe ("Susikikwe")		Cuhuna
Ci'wanakwe		Ciwana, Kwilaina
Uhhuhukwe		_____
Teikkyalikwe		_____
[Knife, not Zuñi]		Hictianni
Sayapa masks in Cuma'kwe		Sayapa, extinct
<i>Officials</i>		
Ciwanni	Momüwite	
Pekkwinne	Tea'akimüngvi	Tsa'tauhu'tcani
<i>Masked Gods</i>		
Koyyemshi	Tatataktcú-mü	Kummayawici
Ca'lako	Ca'lako	_____
Pa'utiwa	Pa'utiwa	_____
Kyaklu	Eototo	_____

ORIGIN AND MEANING.

It is important to guard against the assumption that the Pueblo clan system originated in its present form of a complete whole, and has survived unchanged since ancient times except for attrition and decay in spots. Such may be the fact. But it is also possible that the various correlated clans were once utterly unconnected, and have only gradually been coördinated. There may even once have been a separate and diverse system for each of the four stocks, the never ceasing intercourse between them bringing with the lapse of time a purely arbitrary interrelation and assimilation. Snake and Panther may be clans that were always one, or always two moieties of a unit. Or, it is conceivable that the Snake clan is an old product of the western pueblos and the Panther of the eastern, and that they have been only artificially equivalated by the natives on the assumption that all Pueblo communities must follow the same plan, however different their nomenclature — much as the Romans and Greeks made the entirely unhistorical identification of Odin with Mercury and of Ptah with Hephaistos on the ground that the gods of other nations must at bottom be the same as their own. It is idle to speculate upon these possibilities between which only investigation upon the spot can ultimately decide. What is clear is that there is in the Pueblo mind, and evidently has been for centuries past, a concept of a definite and characteristic scheme of clan organization which is not Hopi or Zuñi or Tewa but common Pueblo.

It is not impossible that when the present imperfect and partly tentative system has been more fully worked out, a grouping may develop in which the total number of clans or clan pairs is significant. The twenty-eight clans

Sayatacca	Sayatacca	
Sayati'a	Wükükwat	Tci'tsinuka
Hehhe'a	Hehhe'a	He'hemi
Yamuhakto	Yamuhakto	
Salimopiya	Hühya	
Wotemla		Kaya'a
Ky'annakwe		Tuluka
Atoele		Kuyautsa
Cumaikoli	Cumaikoli	Cumaikoli, a former fraternity whose masks are now in Zuñi
		Hemuci
Hemucikwe		Tcakkwena
Tcakkwena		Hematatsi
<hr/>		
<i>Various</i>		
Kokko, masked dancer	Katcina	Kā'tsina
Tikkyanne, fraternity	(-wiñ-kyamü)	Tcayāni
Ko-tikkyanne		Kā'tsina tcayāni
Kiwwitsinne		Kā'tsina katcuti (house)

that are now apparent may reduce to twice six pairs, or increase to four times four double clans. Of course, the more perfect any such system, the less likely is it to have had actual existence in history, and Cushing's work reveals the danger of merging the real in the esoteric. But, as just pointed out, we do not yet know whether the system as such ever had much substance or was always a schematic device. The problem of the historicity of the system is a distinct one from that of the essential nature of the system; and in the main a subsequent problem.¹

There are some indications already of a grouping of the paired clans into fours and an association of these with directions. Arrow-Sun-Eagle-Turkey is as yet incapable of subdivision. Kachina includes Raven-Macaw as well as Pine-Cottonwood. It is tempting to connect Rattlesnake-Panther with Deer-Antelope because the Rattlesnake appears in myth and ritual as a horned water monster. It is suggestive that the Hopi class Snake and Horn as the two clans or clan groups that came from the north. Squash-Crane and Cloud-Corn also can hardly have escaped association. Both, according to the Hopi, are from the south. The other southern clans of the Hopi are Lizard-Earth and Rabbit-Tobacco; but to predict now that these were therefore connected in the native mind, would be venturesome, although they are usually mentioned in juxtaposition by native informants.² It is not unlikely that the outcome of further studies in this direction will be, literally, that instead of the native traditions explaining the existing social organization, the scheme of this organization will explain the traditions.

¹ There are two references which make it appear that there may be a distinct recognition by the Hopi of two orders of social classification. In the parts of Victor Mindeleff's "Study of Pueblo Architecture" (Bur. Am. Ethn., Ann. Rep., VIII) compiled by Cosmos Mindeleff from materials collected by A. M. Stephen, there are these statements: "These people are socially divided into family groups called *wingwu*, the descendants of sisters, and groups of *wingwu* tracing descent from the same female ancestor, and having a common totem called *myumu* (*sic*)" (p. 16). This seems to make the *myumu* a clan and the *wingwu* a matrilinear group of actual blood relatives within the clan. In the list of families on pp. 105-108, the clans referred to are listed, on the first mention of each, as *winwuh* or *nyumuh* (*sic*). Thus:

BakabwinwuhReed
HonaunyumuhBear

In this way Young Corn Plant, Jack Rabbit, Bear, Parroquet, Eagle, Hawk, Mescal Cake, and Kachina are listed as *nyumuh*, and Burrowing Owl, Reed, Sand, Badger, Coyote, Lizard, Squash, Sun, Moth, and Crane as *winwuh*, while Spider, Bow, and Rattlesnake are not identified as either. Here it would be tempting to consider the *nyumuh* as "phratries" and the *winwuh* as "clans," an interpretation not wholly incompatible with the words of the previous passage. But unfortunately, several of these eight "phratral" *nyumuh* appear in the formal classifications of Stephen and Fewkes as clans, sub-clans, or synonyms, while on the other hand a number of the "gentile" *winwuh* are clearly not such minor divisions but groups of "phratral" size. The hint for all its promise of being an important clue therefore ends in a conflict and doubt.

² Bur. Am. Ethn., Ann. Rep., XIX, 585 (four times), 651, VIII, 39.

RELATIONS WITH NON-PUEBLO TRIBES.

A rich reward bids fair to crown a penetrating but critical endeavor to connect the clan system of the Southwestern Athabascans with that of the Pueblos. In spite of the overlay of place names, it is clear from the available literature that there is some totemic basis for Navaho gentile organization. The naming of clans after places is evidently a mere disguise or form of appearance. It is likely to be direct Navaho influence that has led the Hopi to enter so fully upon localization of their clans in their traditions, where Zuñi myth, and apparently Keres and Tanoan too, virtually ignore this element. The matter is however too intricate to pursue here, and must be left to investigators of the Navaho and Apache or to a thorough comparative study of the interrelations of the nomadic and town tribes of the Southwest.

Outside the Pueblo region, and in many respects — such as ceremonialism — well outside of Pueblo influence, are a people with a clan organization of definite but light structure: the Mohave. The Navaho veil the presumable totemic basis of their system under appellations of localities. The Mohave avow the totemic reference, but express it in their institutions only through the names of female clan members, — though gentile reckoning in itself is patrilinear. Of about two dozen Mohave totemic implications, half can be placed outright in the Pueblo clan scheme: Cactus, Deer, Mountain Sheep, Cloud, Frog, Food Obtained by Agriculture, Mescal, Tobacco, Fire, Coyote, Sun, Eagle. Others probably correlate: Owl, Screech Owl, Moon, Wind, and Wood Rat; while most of the remainder relate to animals and plants not belonging to the Pueblo area, but probably with equivalents there. Such are Mesquite Bean, Mesquite Screw, Quail, and Beaver. These correspondences must be judged in the light of the fact that the Mohave clans existed in a setting deeply different from that of the Pueblos. There was not a mask, a priest, a kiva, a religious society, a prayer for rain, a scheme of color symbolism, a prayer plume, or any sprinkling of meal, among these half Californian people of the lower Colorado; nor a stone house, a town, nor a trace of mother right.

STRENGTH OF THE GROUPS.

A comparison of the populational strength of the various clan groups at Zuñi, on the three Hopi mesas, at Hano, and at Cochiti, gives reasonable correspondences for the various communities, especially the larger ones in which fewer clans have died out. For convenient comparison the clan

groups are arranged in the order of their size at Zuñi, and the numbers for the other towns have been multiplied by a simple factor yielding a total approximately the same as that of the Zuñi population. All the numbers have been slightly rounded.¹

STRENGTH OF PUEBLO CLANS.

	Zuñi	Hopi, West Mesa: Oraibi x 2	Hopi, Middle Mesa: Mishong- novi and Shipaulovi x 4	Hopi, East Mesa: Walpi and Sichumovi x 5	Hano x 10	Cochiti x 6
Sun, Eagle, Turkey	520	410	520	90	—	25
Dogwood	430	110	60	55	580	565
Corn, Frog	195	100	200	225	560	120
Badger, Bear	195	210	560	160	140	—
Crane	100	20	60	—	—	90
Coyote	75	210	80	80	—	130
Tansy-Mustard, Chapar- ral Cock	60	—	—	255	—	205
Tobacco	45	110	20	185	150	—
Deer, Antelope	20	—	—	295	—	—
Rattlesnake	—	10	—	120	—	—
Lizard, Earth	—	220	20	145	150	—
Of unknown affiliation	10	90	—	—	—	490
	1650	1490	1520	1610	1580	1625

It is evident that there is no great anomaly in the proportional representation of the clan groups at Zuñi. On the other hand, there are very notable differences between the three Hopi mesas, which would have been further accentuated if individual towns instead of town groups had been listed. With such diversity prevailing between the members of a closely knit and isolated body of towns of the same speech, it is rather surprising that Hano and Cochiti do not differ more from Zuñi. It is also evident that it is the Middle Mesa among the Hopi that in its clan distribution reveals the closest similarity with Zuñi. It is however on the East mesa that the Zuñi claim one of the towns as their own, an assertion that is

¹ For Walpi, Sichumovi, and Hano there is the personal census by Fewkes; for Oraibi, Mishongnovi, and Shipaulovi the house count of Stephen-Mindeleff; for Cochiti Starr's census. The Zuñi figures are the number of inhabited houses multiplied by seven and a half.

said to be confirmed by the Hopi.¹ It is extremely desirable that further data of this kind be obtained for some of the other Keresan and Tanoan communities.

As regards the clan groups, it is plain that what is abnormal about the Dogwood or Kachina group at Zuñi is not its size but the fact that it has been consolidated into a single clan. It is the Hopi who are exceptional, perhaps, in having this group weakly developed in numbers. The Arrow-Sun-Eagle-Turkey group is very variable; perhaps because it is not a true group. Cloud-Corn, as might be expected, runs strongly everywhere, though it shows no evidence of being the dominant group among any people. Much the same can be said of Badger-Bear. The lack of Lizard-Earth clans at Zuñi as well as at Cochiti may reflect a Zuñi-Keresan peculiarity. It is likely from all the evidence available that the Zuñi bonds to Laguna, Acoma, and Sia were at least as close as with the Hopi. Very striking is the almost total absence of the Deer-Antelope and Rattlesnake-Panther groups except on the Hopi East Mesa, in spite of the comparative ritualistic importance of these clans at Zuñi as well as among the Hopi in general.

RELIGIOUS FUNCTIONS OF CLANS.

RELATIONS TO THE FRATERNITIES.

One of the matters of greatest interest concerning the Pueblo clan is its relation to the religious society or fraternity. That such connection exists in some measure, is indubitable. The very resemblance in size, in name or totemic reference, in the fact of organization as part of a scheme, must inevitably cause an approach and partial assimilation that results in certain connections. The clan and the fraternity can be viewed as expressions of two distinct needs or impulses, one social, the other religious; but this fundamental diversity of direction would not prevent one influencing the other, or both taking the same color and similar outlines under the impress of the general culture in which they flourished.

But it is superficial to assume that because the Pueblo clan and fraternity reveal certain associations, they are at bottom one, and that all

¹ Stevenson, p. 411, note b. Compare Fewkes, xix, 584, 610, 1900. The only specific resemblance of the East Mesa to Zuñi is the presence of the Tansy Mustard group. This may rest on an actual movement of a body of families; and this movement, vaguely augmented in tradition, may be the basis of the native belief in a connection between the towns as such.

discrepancies between them are only the distortions due to the meaningless accidents of time. On the ground of theory I could no more believe that the Pueblo fraternities are merely clans ceremonially organized than I can adhere to the view that the clans were once separate local communities.

The question cannot however be settled or even argued with much profit on the basis of opinion, and what is needed for progress toward its solution is facts. We must therefore be grateful to Dr. Fewkes for having presented a valuable body of specific evidence on one aspect of the problem among the Hopi.¹ He gives most of the male and part of the female membership, by clan affiliation, of the fraternities at Walpi. Each of these religious bodies is traditionally linked with a clan or group of clans, which are supposed to have founded or introduced the fraternity and its ceremonies. Dr. Fewkes's data may be summarized as follows:—

Fraternity	Traditional Founding Clans	Membership by Clans												
														Total ²
		Snake	Horn	Flute	Squash	Cloud	Lizard-Earth	Rabbit-Tobacco	Tansy Mustard	Kachina	Firewood	Reed	Badger-Bear	
Antelope	Horn	3	1	1	—	3	1	—	—	—	1	—	—	10
Snake	Snake	7	1	1	—	7	1	4	7	1	1	2	3	35
Flute	Flute	3	—	2	—	2	—	1	2	—	—	1	—	11 ³
Aaltu	Squash	2	2	1	—	4	6	5	6	2	2	1	6	37
Wüwütcimtu	Squash	5	2	—	—	1	3	3	7	2	3	1	—	27
Tataukyamu	Rabbit-Tobacco	2	4	4	—	3	2	6	2	2	3	2	4	34
Kwakwantu	Cloud	2	1	2	—	7	2	4	3	1	—	—	3	25
Lalaköñtu	Cloud	—	1	—	—	6	—	—	1	—	—	—	—	8 ³
Mamzrautu	Squash	4	—	—	—	3	—	—	2	—	1	—	—	10 ³
		28	12	11	—	36	15	23	30	8	11	7	16	

It is clear from these statistics that there is a very slender tendency for the traditional founding clan to be more heavily represented in its fraternity, proportionally, than other clans; and that, conversely, the members of a clan incline slightly more to membership in the society traditionally asso-

¹ In "Tusayan Migration Traditions," *op. cit.*, 622-631.

² Excludes members of Hano clans and a few doubtful cases.

³ Data incomplete.

ciated with their clan than to membership in others. But the predominant impress of the figures is in the other direction, namely toward the conviction that membership in all fraternities is shared, and nearly equally, by members of all clans. Thus Horn has only 3 members out of 10 in the Antelope society, Snake 7 out of 35 in the Snake society, Flute 3 out of 11 in the Flute society, Rabbit-Tobacco 6 of 34 in the Tataukyamu, Cloud 7 of 25 in Kwakwantu; besides which there are three societies associated with a clan group which is extinct. The only exception are the six Cloud people among eight recorded Lalakoñtu members; but there the data are avowedly very imperfect. The results are the same when the figures are read the other way around: 21 of 28 religious memberships of Snake clan people are in fraternities other than the Snake society, 11 out of 12 for Horn, 2 of 11 for Flute, and so on. Even the Cloud clan has 13 memberships in its two associated societies, but 23 in other fraternities.

I cannot therefore agree with Dr. Fewkes in accepting the elaborated native view that the Snake society ceremonies were originally a "zoototemic" clan ritual of the Snake clan, and that subsequently "the advent of other families" has "changed the social connections of the personnel" of the society and altered the purpose of the ritual, "so that at present it is a prayer for rain and for the growth of corn — a secondary development due mainly to an arid environment." That this interpretation is logically possible, is evident enough. But it is precisely something to be demonstrated instead of postulated. And Dr. Fewkes's own evidence so far appears to be overwhelmingly unfavorable to his view.

That there is some leaning of the Snake clan toward the Snake society and vice versa, and so on, proves nothing as to origins or even former status. Even if a clan and a society sprang from utterly diverse sources and impulses, the mere fact that they had a common name or had become symbolically associated, would be sufficient to produce such a tendency. Having a Snake clan and a Snake society, the Hopi would be an extraordinary people if they did not in some way connect the two, positively or negatively, no matter how unrelated the pair of bodies might be in source or purpose. In fact, one might incline to expect a stronger connection than actually is evinced.

When now we turn to Zuñi, there is a significant statement by Mrs. Stevenson on the last page of her great work: —

What part clanship played in the dawn of the ritualistic life of the Zuñi is yet to be determined. It is certain that for a long time past membership at large in the fundamental religious bodies of the Zuñi has not been dependent on ties of clanship, though in certain cases succession to office in fraternities does depend on clanship.

I am able to confirm Mrs. Stevenson's verdict in the fullest degree. The fraternity affiliations of the fifty-six members of the Coyote clan (Table 7) are distributed as follows:—

Makkyetlannakwe	3 persons in house 184
Makkyets'annakwe	1 in 424, 1 in 454a
Sanniakyakwe	1 in 186
Shuma'kwe	1 in 186
Shi'wanakwe	1 in 323, 2 in 424
Chikkyalikwe	1 in 440
Uhhuhukwe	1 in 369, 1 ex 369
Peshatsillokwe	1 in 538b, 1 ex 454a
Hallokwe	1 ex 424
Apitlashiwwanni	1 ex 186

Total, 17 memberships in 10 fraternities, with 3 fraternities not represented. The largest number of Coyote people in any one society is three. It is particularly significant that there is only one Coyote clan member of the Sanniakyakwe; for the Sanniakyakwe or "Hunters" are often loosely though improperly referred to as Suskikwe, which means either "coyote clan" or "coyote fraternity"; in fact, Suskikwe is probably the more frequent designation of the society in popular usage. A connection of this clan and fraternity would therefore seem specifically indicated; yet is not at all borne out by the facts.

It is also plain that members of the same family tend to join the same fraternity: three people of house 184 in Makkyetlannakwe, two of 424 in Shi'wanakwe, two of 369 in Uhhuhukwe.

In recording the census of the Tobacco clan (Table 8), I secured also the fraternity affiliations of men married into the clan. In this case the household solidarity comes out even more clearly.

Kin group in houses 72, 557, 561:

Makkyetlannakwe: 3; her mother's sister's daughter 12; husband of sister of 3; husband of sister of mother of 3

Shuma kwe: mother's brother of 3

Kin group in houses (42), 328:

Shuma'kwe: 1

Kin group ex house (223):

House 517a: Makkyets'annakwe: 6; her sister 7

House 549a: Shi'wanakwe: 36; her mother's brother 37

Hallokwe and Tlewwekwe: brother of 37

House 558: Hallokwe: 33; his sister's daughter 27; his sister's son 29

Makkyetlannakwe: husband of sister of mother of 27

Makkyets'annakwe: 32

It is clear what happens. A person belongs to a society. One of the family falls sick — a husband, wife, child, sister's child, or a brother or

mother's brother married out. A fraternity is to be called in to cure the patient, and receive him or her into its ranks subsequently. Two times out of three, the fraternity is chosen which already has affiliations in that family. An Uhhuhukwe thinks of the Uhhuhukwe to treat his nephew or wife or child rather than the Ne'wekwe or Makkyets'annakwe in which he may happen to have no relatives. In short, it is blood relationship, and beyond this common home life, that most frequently determine choice of fraternity; not clan pertinence. We are confronted by another instance of kinship and the house, in other words familiar personal association, being the decisive factor at Zuñi in affairs which among other clan divided peoples have generally been assumed to be ruled by clan laws and clan connections.

To clinch the matter, I reversed my procedure, and recorded the clan affiliations of the members of a fraternity. Table 11.

TABLE 11.
MEMBERSHIP OF THE NE'WEKWE FRATERNITY

Name	Sex	Clan	Father's Clan	Mode of Entry	Notes
<i>Amossonna, Heads or Officers</i>					
1 Kuwacci	M	Cr	Be	Taboo	Nemossonna, head of fraternity. This is the only office that must be filled by a member of a specified clan. The reason is that the Ne'wekwe fetish is Crane.
2 Annu'u	M	P	Cn	Sickness	Akwamossi, medicine head
3 Lu'nasi	M	Ba	?	Sickness	Pekkwinne, speaker. <i>Resigned.</i>
4 Kyaena	M	Cr	Cn	Trespass	Nemossonna tca'le, child of head of fraternity, has care of ne'etone, the fraternity fetish. First cousin of 1.
5 Tsatisilu	M	Ba	P	Sickness	No title, has to do with the prayer plumes. Husband of first cousin of mother of 1. Fraternity father of 42, i. e., he initiated her.
<i>Ne'wekwe Tikkyillaponna, Members</i>					
6 La'tiluhsi	M	Ba	P	Transfer	From Peccatsillokwe
7 Ci'pala	M	E	?	Sickness	
8 Nu'iti	M	E	Nav.	Point of death	Younger brother of 7
9 Tsa'tsana	M	P	?	Trespass	Is Ky'akkwemossi-Lacci of the tribe
10 Huñkye	M	Cn	P	Sickness	Son of 9
11 Mawwe	M	Tk	E	Sickness	
12 Kaimutiwa	M	P	E?	Sickness	
13 We'tci'i	M	E	Tk	Sickness	
14 We'pac	M	S	Cr	Sickness	Son of 4
15 Ha'mona	M	Ba	?	Sickness	
16 Tsa'ti'eluhsi	M	P	E?	Sickness	Half-brother by same mother of 12
17 Commicci	M	Tk	S	Transfer	From Uhhuhukwe
18 Layasiati'ts'a	F	Tk	S	Sickness	Younger sister of 17
19 Lautihyalu'ts'a	F	Cr	Tk	Sickness	
20 Tsayati'ts'a	F	Tk	?	Sickness	
21	F	E	Cr	Sickness	Mother-in-law of Pe'ussi
22 "Kwanatelita"	F	F	Be	Sickness	
23 "Lo'kane"	M	F	E	Sickness	
24 E'ts'ena ("Ne'santu")	M	P	E	Sickness	Son of 8. Lives in the Ne'wekwe fraternity house

TABLE 11.—(Continued).

Name	Sex	Clan	Father's Clan	Mode of Entry	Notes
25 Laya'ayati'ts'a	F	F	?	Transfer	From Peccatsillokwe. Mother of 23.
26 Teihna	M	Cn	P	Trespass	Fraternity father of 1.
27	F	E	?	Sickness	Mother of 7 and 8
28 Laitisilu'ts'a	F	E	Cn	Sickness	Sister's daughter of 27
29	F	E	?	Sickness	Wife of 16
30	F	E	P	Sickness	Daughter of 16 and 29
31 Tsena'itti	M	S	P	Sickness	
32 Ts'ayu'iti'tsa	F	Cn	Ba	Sickness	
33 Tsaniasi'ts'a	F	Ba	?	Sickness	Stepmother of 5
34 "Manuelita"	F	Tk	Ba	Sickness	<i>Resigned</i>
35 "Pintu"	M	P	Be	Sickness	<i>Resigned</i>
36 Hu'ni	M	Tk	S	Sickness	<i>Resigned</i>
37 Ayyuyisiwa	M	Tk	S	Sickness	Younger brother of 36. <i>Resigned</i>
38 Kyenti	M	Tk	S	Sickness	Younger brother of 36 and 37. <i>Resigned</i>
39 "Husantonio"	M	Ba	?	Sickness	Father of 34. <i>Resigned</i>
40 La'tomai	M	P	Cr	Sickness	Younger brother of the recently deceased wife of the Kommossonna, who was also a member
41 Wayahsiti'ts'a	F	Cn	P?	Sickness	Wife of 9
42 (Wife of Tsiwahti)	F	E	?	Sickness	Sister of 27, mother of 28

NOTES ON TABLE 11.

There are only two "orders" or classes (the Zuni call these tikkyawe, the same as the fraternities themselves) in this society. The *ne'wekwe* are the members of common rank, who have only a baton or "bauble." The *akwawe tikkyillaponna* or "medicine fraternity having" constitute the order of those who cure sickness, and are *miwilli*, that is, have *miwe*, or ceremonial feathered corn ears. This order is also called *onna-yanakya* "road complete" that is, completing the path of life of the sick to its full end.

7 of the 42 members, including one of the officials, have left off active participation in the society's doings. This is called *tcunnekya*, the common word for "finished, ceased."

There are five modes of becoming a member.

Taboo, or *iteckwihkya*, touching the privates of a member while he is *teckwi* or

sacred. It is significant that the head of the society is the only present member who entered by this method.

Trespass, or *allukya*, "be snared or caught," compulsory initiation in consequence of entry into a ceremonial session of the fraternity. Children who blunder into the room are said to be made members; but it is of interest that the only three Ne'wekwe who joined by *allukya* are old men, who undoubtedly knew what they were doing. This, like the last, seems therefore to be a ritualistic device to enable voluntary affiliation to take place without sickness.

Sickness, or *we'awakya*, is the commonest mode of joining the fraternity: 34 of 42 members entered in this way. It is not necessary for the recovered patient to join the society that cured him. Payments may be made instead to the particular official that extended the treatment, and the patient be "given" to him as a member of his family; but the fraternity is often entered. The initiation takes place at the next regular meeting for the purpose. The strong preponderance of this avenue of affiliation,—particularly in a society whose public rituals are marked by buffoonery more excessive than that of the masked Koyyemshi and similar to that of the Rio Grande Koshairi,—stamps the fraternities of the Zuñi as eminently curative in their avowed purpose, and goes far to explain why there are no true shamans in this tribe. The ritualized medical societies have evidently left no need and little place for the individual who receives power directly from personal association with the supernatural world. When Zuñi home remedies or treatment by an individual fraternity member fail, the society is called in. This is not saying that the Zuñi fraternities began their existence as medical bodies or originated in associations of shamans. The Hopi societies are rather devoted to rain making; those of the Sia approximate more closely to the Zuñi fraternities. Either the Hopi or the Sia-Zuñi type of fraternity may have been the more original, or they may both be modifications of organizations with a still different purpose. The point obviously cannot be determined by a study of one tribe alone. We must know the functions of the societies among all the Pueblos and if possible their neighbors, and be able to realize justly their relations to the other manifestations of Pueblo civilization, before an answer to the question of former type and course of development can be given. To formulate a history on the basis of the present societies in a single tribe, or the geographic environment of that people, is purely speculative.

In case of critical illness, a patient is occasionally initiated immediately, that is on the fourth night, by the Kokko-Lanna or great god and two associates, who visit him in his own home. This seems to be the only occasion on which this fraternity or any other uses masks or impersonates gods. This procedure is called *acceni'a heccina pu'akya*, "about to die hurriedly initiate." There is only one such Ne'wekwe member at present, and Kokko-Lanna initiations by the two fraternities that practise this method seem ordinarily to occur only at intervals of some years.

A member of any fraternity can join any other—except the Apitlashiwanni and perhaps the K'oshikwe—by voluntary transfer. He is then only washed, his initiation into his former society apparently sufficing for the new one. There are three Ne'wekwe who have come in by transfer; but it is probable that most of the seven who have "resigned" have become members of other bodies.

The clan affiliations of the Ne'wekwe are distributed as follows:—

	Clan	Father's Clan
Crane	3	3
Pikchikwe	7	6
Eagle	9	3
Badger	6	2
Sun	2	5
Turkey	8	2
Corn	4	3
Frog	3	—
Bear	—	3
Undetermined	—	15
	<hr/> 42	<hr/> 42

The only connection which the fraternity has with a clan is with Crane. As Mrs. Stevenson says, the head of the Ne'wekwe must be Crane. It seems that this is because the ettonne or fetish of the society is Crane, that is, in the keeping of some member of the Crane clan. It appears below that the relation of non-fraternity priests to clans is essentially of the same nature: the ettonne of each priesthood is associated with a clan.

Family groups are again strongly represented: —

1, 4, 5, 14, 33
 7, 8, 24, 27, 28, 42
 12, 16, 29, 30
 17, 18
 23, 25
 36, 37, 38
 34, 39
 9, 10, 41
 40 and a dead sister

This makes 27 persons, or two thirds the membership of the society, in eight family groups; and my tracing of kinship is very likely incomplete.

The only specific references to clan membership functions in fraternity organizations which I have found in Mrs. Stevenson's work are the following,—most of which refer to one society.

The directors or heads of the Shiwannakwe and Saniakiakwe societies are of the Turkey clan, those of the Newekwe and Hlewekwe of the Crane clan. The pekwin or deputy¹ of the latter fraternity must be Corn clan.²

The Hlewekwe Hlemmosona (sword director) must be Crane clan. Other offices are filled by the Pichikwe clan, while the warrior must be of the Bear clan.³

¹ Literally: "speaker."

² P. 40.

³ P. 449.

In the Hlewekwe ceremonies there is a procession to carry a bundle of prayer plumes to a spring. This is headed by a Crane man, personating the original director. He is followed by four representatives of the beast gods. The first warrior personates the Panther of the North and must be Corn clan, there being no Panther clan; the second and third personate the Bear and Badger and must be Bear and Badger clan respectively; the fourth, who represents the White Wolf, may be of any clan.¹

On the fourth day of a Hlewekwe initiation, the sword director, warrior, and six members belonging to the Crane clan, go to the house of the hle-ettone, while a Dogwood member visits the house of the Shiwanni of the West to receive a prayer plume.²

Later in the Hlewekwe ceremonies, two Bear clan members sprinkle meal upon notched sticks and scrape these.³ During the next song, the Muchailhanona, who must be Pichikwe, or child of Pichikwe, appears.⁴

The director of the Shumaakwe fraternity must be of Chaparral Cock clan and his pekwin a child of Chaparral Cock. Other officers must be Crane, Pichikwe, and Frog, or children thereof.⁵

In the Great Fire fraternity, the medicine water maker and his speaker are always Eagle clan or child of Eagle, the sword director and his speaker Badger or child of Badger. The mosona or director, and other officers, it appears, can be of any clan.⁶

In the Bow priest initiation, two young men, of Deer and Bear clan, stand north and south of the Shipapolima excavation and mounds and clasp hands.⁷ The holder of the scalps in the circle dance around the pole is always Coyote clan or child of Coyote.⁸

I have only one observation of my own to add. No Badger person can become a Tlewewekwe. A young Badger man recently touched a Tlew-

¹ P. 445. This is a standard Zuñi symbolism — Panther-North, Bear-West, and so on. The clan selections have simply been made, inadequately it is true, but as nearly as might be, with the purpose of expressing the symbol-complex.

² P. 453. The clan participations here have reference to the fetishes or ettowe of the fraternity. The Tle'ettonne or fetish *par excellence* of the Tlewewekwe is kept in the Crane house 177. A second fetish also sometimes called Tle'ettone is the Mu'ettonne, or fetish of the Muwaya ceremony, which rests in Corn house 38, together with a specifically Corn clan fetish. (Just so Crane house 286 harbors the Crane clan fetish and that of the Ne'wekwe which compels a Crane director of that society.) Mrs. Stevenson, p. 444, speaks of the Mu'ettonne as "the cherished possession" of the Crane clan. In the myth, three other fetishes were later designated as Mu'ettowe: these belonged to the Corn, Badger, and Tansy Mustard clans (p. 446). These would appear to be the clan fetishes numbers 47, 44, and 51 of my Table 12. As for the Shiwanni of the West, he is Dogwood clan, according to Mrs. Stevenson, p. 167.— In this matter then, the association of fraternity and clan is wholly through the fetishes owned or used by the fraternity.

³ P. 473. Mrs. Stevenson does not explicitly state that this clan choice is regulated, but such seems to be her implication.

⁴ Pp. 447, 473. This personage is the leader of the procession that carries the fetishes just referred to.

⁵ Pp. 532, 411.

⁶ P. 486.

⁷ P. 584. The author is describing a specific representation of a ceremony, and does not state whether this selection was an accident or part of the prescribed ritual. The latter seems more likely. On the other hand, in a list of participants in the circle dance of the Bow priesthood (p. 605), the clan affiliations are probably meaningless, so far as they do not relate to priests.

⁸ P. 605.

wekwe official while he was teshkwi or taboo, with the intent of becoming a member; but was declared ineligible on account of his clan.

The names of the Zuñi fraternities have little similarity to the designations of Pueblo clans, and almost none to those of the Zuñi themselves. The Great Fire and Little Fire societies might be connected with the Coyote-Firewood-Fire group (makkye is a firebrand or glowing coal, not fire as such); but derive their name much more probably from the fire-playing and fire-eating jugglery of these fraternities. There are Ant and Cactus and Wood clans in other pueblos; but the Zuñi societies of these names seem to be named from their practices of curing illness brought on by ants, of whipping with cactus stems, and of swallowing wooden swords or staves. The Bow priests are so called as a warrior society, whose heads constitute the secular or executive arm of the Ashiwanni priesthood. The names of other fraternities are either obscure or trivial. The Shi'wanakwe are those who do not abstain from meat, according to Mrs. Stevenson,¹ the Shuma'kwe are named from Shuminna, a spiral shell.² The latter etymology seems Zuñi, but is probably false. The Shuma'kwe keep the Shumaikoli or Shumeyekoli masks, which are known also in eastern Pueblos; in fact the Laguna Shumaikoli masks are in the keeping of the Zuñi Shuma'kwe today. Before the Zuñi etymology can be accepted, it will therefore have to be proved that there is no satisfactory Keresan or Tanoan one. Mrs. Stevenson renders Uhhuhukwe as "Eagle-down" and Chikkyalikwe as "Rattlesnake." U- is the stem for down, wool, cotton, or foam, and chi- is the first syllable of the word rattlesnake, teittola. But the remaining elements of both names are obscure, and I have never obtained a translation of either. The same is true of Ne'wekwe, Mrs. Stevenson's "Galaxy" society. Finally the Peshatsillokwe or "Cimex" fraternity is so called because when this society seceded from Little Fire, its members found their new headquarters infested with bed bugs.³ When a people establishes its nomenclature upon such incidents, it would be far fetched to look for constant esoteric connections between the designations of its fraternities and its clans.

So far as the Pueblos as a whole are concerned, all that it is possible to say in the present state of knowledge, which leaves us still ignorant as to the real identities of the societies in the various pueblos, is that fraternities of certain names, such as Knife, Ant, Snake, Flute, and Firebrand, have a wide distribution, and that some of these appellations appear also as names or synonyms of clans; but that, if there is connection between the two sets

¹ P. 428.

² *Ibid.*, p. 530.

³ *Ibid.*, p. 550.

of designations, the clans are as likely to have received their nomenclature from the societies as the societies from the clans.

In fine, the Zuñi fraternity is, if not primarily, at least largely, a body of religious physicians. Membership is not limited by sex, is voluntary, and is not clan controlled but tends to follow blood kinship and marriage connection. Such slender relations as the fraternities have to clans are expressed in the personnel of their officers, but seem to rest basically on the association of their fetishes with particular clans.

I suspect that this description will prove to apply fairly well to the societies of the other Pueblo Indians. That membership follows personal relationship rather than clan adherence at Sia, and that at least a considerable part of the function of the societies there is curative, appears from Mrs. Stevenson's valuable essay on that pueblo,¹ and may therefore be inferred for the Keres at large, and as probable for the Tanoans. At Hopi we hear more of rain making than doctoring, and more of "priests" than of "theurgists." The fetishes are also relatively less important than at Zuñi; or else have been unduly neglected by students. But the statistical studies of Dr. Fewkes prove the slightness of the bond between clan and society, except as a theoretical and mythological one, and consequently increase the probability of the factor of blood lineage being potent. That each of the groups of pueblos, each town even, will show a certain individuality in the character of its fraternities, is to be expected; and it is likely that the Hopi will prove to be the most peculiar. But the common element is bound to outweigh idiosyncracies, in so restricted and special a culture as that of the Pueblos; and the clan and kin relations of the fraternities everywhere in the area may therefore be anticipated to be similar to those here outlined.

RELATIONS TO THE KOKKO CEREMONIES.

On the whole, the religious functions of the Zuñi clans come out most markedly in the ritual institutions other than the fraternities, those connected with the Ko-tikkyanne, the "god-society" or "masked-dancer-

¹ *Op. cit.*, p. 112. The Sia Querranna society has a reduced membership of three: the honaaite or head (corresponding to the Zuñi mossona), the vicar (evidently the Zuñi pekkwinne), and a woman; besides a five year old boy novice. "Three generations are represented in this society: father, son, and grandson." The lineage is paternal, Sia clans maternal: thus close kinship is the determining factor. Compare p. 76: "The honaaite (of the Snake fraternity) and his younger brother were joined by the third member of the society." Fragments like these indicate that a condition of society closely parallel to that obtaining at Zuñi will be found among all or nearly all the Pueblo Indians as soon as attention is directed to other matters than the clan pattern that has so long been uppermost in our minds.

society." It is in these ceremonies, with but few exceptions, that all the masks are worn; it is with them that the kiwuitsiwe or kivas are associated; and it is they that are almost wholly concerned with rain and are directed by the ashiwanni or "rain-priests," while the fraternities heal the sick or demonstrate magic, and have officials but no true priests. The Kotikkyanne rituals often relate to shrines, the fraternities use altars and sand paintings.¹ Finally, initiation into all fraternities is optional, and membership is open to women as well as men,¹ whereas the Kotikkyanne includes all males but no females,² and entrance is compulsory.³

It is rather remarkable that the clans, or individuals specifically chosen because of their clan membership, should enter rather more frequently into the communal rituals of the Kotikkyanne than into fraternity ceremonies, since in names, in size, in their total number, and in the circumstance of their being equivalent units in a mass, the clan and the fraternity are similar. Yet such seems to be the fact. If confirmed by further researches, this unexpected correlation must lead to two inferences: first, that the Pueblo fraternity is, as already argued, only secondarily connected with the clan and not organically an outgrowth of it; and secondly, that the clan as such is to the native mind at bottom not an integral unit, like a group of blood relatives, but essentially a schematic subdivision, and perhaps a more or less artificial one, of the community as a whole. The latter conception is one which it has been my effort to develop in just measure on a variety of grounds throughout this work.

These are the principal of Mrs. Stevenson's references to functions of clan members in the Kokko rituals:—

¹ Excepting the Cactus and Bow priest fraternities, which are essentially warriors' societies.

² Except in rare and special circumstances.

³ This dualism is absolutely fundamental to an understanding of Zuñi religious institutions. It has been well emphasized by Mrs. Stevenson through the complete separation of the two groups of activities in her book. The tribal rites of the Kotikkyanne she treats on pages 20 to 282, and separates by her account of arts, customs, and medicine from her description of the fraternities on pages 407 to 608. It appears that the distinction is also a basic one among the other Pueblos, though the manifestations of the two groups of ceremonies are not always exactly the same, the kiva, for instance, belonging to the tribal ritual at Zuñi, but to the fraternities with the Hopi. Nevertheless, the difference is sharp at some points among the latter people: compare Fewkes, xix, 623, 630-631, 1900. The same may be said of the Rio Grande towns, in spite of Mrs. Stevenson's rather obscure presentation ("Other Societies," pp. 116-118, versus pp. 69-116 and 118-131, in *Bur. Am. Ethn., Ann. Rep.*, xi, 1894). The Sia Koshairi and Querranna, or at least the latter, appear to be true fraternities, but their functions ally them closely to the Zuñi Koyyemshi or "mud-heads" who are an integral element of the tribal cult.— Compare the designations: Sia Katsuna, Hopi Kachina Zuñi Kokko,— whence Ko-tikkyane.— Mrs. Stevenson's Kotikili is not the name of the organization, but the designation of its members: tikkyanne, fraternity; tikky-illi, having a fraternity, a member thereof; ko-tikky-illi, having the god fraternity.

The Koyemshi are chosen annually from four fraternities in rotation, according to their fathers', not their own, clan membership. Thus the personator of the first Koyemshi, the Awan Tachu, must be, one year, a Newekwe man whose father was Crane clan; the second year, a Showekwe with a Pichikwe father; the third year, a Koshikwe with a Tobacco clan father; the fourth year, a Matkethlannakwe with Turkey father; and the fifth year as in the first. The second or Pekwin Koyemshi is chosen from the same four fraternities, but successively from among men whose fathers were Pichikwe, Corn, Pichikwe, and Badger. Eleven clans are thus represented among the forty impersonations of four years: 6 Pichikwe and Badger, 4 Crane, Eagle, Sun, and Frog, 3 Corn, Coyote, and Turkey, 2 Bear, 1 Tobacco. It is not clear whether this intricate regulation is a conventional crystallization or rests on esoteric symbolism. In any event, it is not clan members but "children of clans" that are involved.¹

The Koyemshi masks seem to be in charge of a man of the Eagle clan.²

The Komosona or director of the Kotikili and his warrior or Kopitlashiwanni (literally, "god bow priest") must be Deer clan. The Komosona's Kopekwin or deputy (literally "god speaker"), and his warrior or Kopitlashiwanni must be Badger clan. The fact that the Deer Clan is almost extinct causes much anxiety to the Zuñi. The present warrior to the Komosona belongs to the Bear clan, owing to the inability to find a man of the Deer clan among the Apitlashiwanni (Bow priesthood) to fill the place.³

The ritualistic myth recited by Kiaklo is in the keeping of four men, two of whom must be Pichikwe and two children of Pichikwe. At the time the myth was secured, the four were respectively Parrot division of Pichikwe, Raven division of Pichikwe, Corn with Pichikwe father, and Frog with Pichikwe father.⁴

The office of fire maker for the sacred fire of the new year is filled alternately by a member of the Badger clan and a child of that clan.⁵

At the winter solstice ceremonies, the idol of the elder God of War, the accom-

¹ Based on Stevenson, p. 235. I did not receive from the Zuñi the impression of free choice which Mrs. Stevenson conveys. At all events, the selection is not made by the clans involved. The Awan Tachu, the father of the other nine Koyemshi, is first selected by the Ashiwanni and given a prayer plume. Then the Pekkwinne tells him to cast about him in his mind and find associates who will fill their places well. There is a strong tendency to select the same men that occupied the posts four years before. In 1916, for instance, a Showekwe year, seven of the ten were the same as in 1912. In addition, the Awan Tachu of 1912 had been reelected; but he died in May or June, shortly before the summer solstice dances. The woli ("manager" according to Mrs. Stevenson, "servant" according to the Zuñi) of the Koyemshi was then designated to act temporarily in his place, and appeared in the first dance, on June 23 and 24. Of the two not reappointed, one was an old man who had become too feeble for the strenuous exertions of the office, although his absence was regretted, since a humped back had added to the ludicrousness of his presentation; and the other was the acting Pekkwinne of the summer of 1915, who was apparently mortified at not having been chosen to fill that distinguished office permanently, and refused to serve as Koyemshi.

² P. 142. These masks are regarded as the equivalent of an ettonne or are intimately associated with a certain ettonne; and the set of priests that go into retreat in the house where the masks are kept, are in part actually Eagle clan, and are all considered or called Eagle clan people.

³ Pp. 47, 62.—The Komossona in 1916 however is still of the Deer clan.

⁴ P. 66.

⁵ P. 114.

panying games, and four prayer plumes are made by men of the Deer clan, the corresponding objects for the younger God of War by men of the Bear clan.¹

On the ninth day of the winter solstice ceremonial the people of the Corn clan and the children of the clan "assemble in the house of the father or head of the clan to choose a man to personate Pautiwa."²

Late on the next day, Pautiwa enters the pueblo, preceded by five Sun clan men, and after four circuits deposits prayer plumes in the wall of a house at the east end of the town. He is assisted by a man of the Sun clan, who personates his father, and by two Pichikwe, who represent his brothers. After visiting the six kiwitsiwe, he proceeds to the northwest corner of the village and receives a hakwani, or cotton loop symbol, from a Pichikwe woman. After his departure, Heiwa kiwitsine is visited by Chakwena, whose personator must be of the Badger clan.³

Before heading the quadrennial pilgrimage to Kothluwalawa at the summer solstice, the Komosona and Kopekwin are provided with prayer plumes made by men of their respective clans: Deer and Bear. In the pilgrimage, a Deer and a Badger clan man follow the director of the Hunters' fraternity and precede the Kopekwin.⁴

At the first of the summer solstice dances, Deer women bring food, water, and yucca suds for head washing to the kiwitsine in which the Komosona is, and Badger women do the same for the Kopekwin in his house.⁵

The Awan Tsita or Great Mother (better, "their mother") of the personators in the Kianakwe ceremony, who bathes their heads, is of the Corn clan.⁶

The personators of the Kianakwe in the quadrennial dance of that name are always members of the Corn clan and Chupawa kiwitsine.⁷

The people of the Frog clan take care of the spring Kiananaknana, which is sacred to the Ashiwanni or rain priests.⁸

In the quadrennial Hlahewe ceremony, the four Kiapunakwe are: Hlahewe side, youth, child of Dogwood, maiden, Dogwood, accompanying man, Dogwood; Shokowe side, youth, Corn, maiden, child of corn, accompanying man, Corn. In the next performance, the Hlahewe side youth is Dogwood and the maiden child of Dogwood, and the two Shokowe side impersonators interchange also, as to clan affiliation. In the third performance, the first arrangement prevails once more, and so on.⁹

¹ P. 112.

² P. 126.— I do not believe that this allusion essentially contradicts my statement as to the absence of effective clan organization or the lack of recognized clan heads with social or clan functions. The occasion here referred to is purely ceremonial, and yet the ceremony in question is tribal. It might be that the clan, for the time being, filled the office of a body of priests. But I suspect the accuracy of Mrs. Stevenson's presentation on this minor point. In the first place, my informants insist that the Pa'utiwa impersonator must be Pichikwe, not Corn. Secondly, I cannot conceive of a Zuñi "father" of a clan. There are mothers and grandmothers; but older males are kyakkya or kyakkya-racci — mother's brother or old mother's brother — or sometimes (maternal) grandfather. Finally, the choice by the clan as a body would be entirely unparalleled, and appears to me contrary to Zuñi habits of thought and action. I should expect the selection to be made by some regular high official of the Kotikkyanne — the Komossona, the Kyakkwemossi, or the six highest Ashiwanni denominated Tek'ohannakwe, "day persons"; or by some one designated by them; or by the kiwitsinne whose turn it was to supply the Pa'utiwa.

³ Pp. 137-140.

⁴ P. 153.

⁵ P. 162.

⁶ P. 44.

⁷ P. 218. The name Chuppawa relates to corn.

⁸ P. 59.

⁹ P. 188 note b.

Toward the close of the same ceremony, a Frog clan man sings rain songs from dawn to sunrise, when his power causes prayer plumes and miwachi in the booth to fall over.¹

In the Bitsitsi ceremony, the fruit and seed bearing women who race to the assembled Molawe at Kushilowa, are selected by a Tansy Mustard man, "whose office is for life."²

RELATIONS TO THE PRIESTHOODS AND FETISHES.

Mrs. Stevenson gives an enumeration of the priesthood,³ by sets of priests and their clan affiliations, as constituted in 1896. The Pekwin, who is also priest of the zenith, must be Pichikwe, though the subdivision of this clan is immaterial. The Kiakwemosi, or "ruler of the houses," who is the head of the Zuñi hierarchy so far as there is any, is either Pichikwe or has a Pichikwe father. As regards the other priests, she makes this statement:

This priesthood is confined to families, the rule being that each member of a division of the priesthood [*i. e.*, each member of one of the fourteen sets of priests] must be of the clan or a child of the clan of the shiwanni of the division. The son or brother of the shiwanni fills a vacancy, preference being given to the eldest son.⁴

The impression derived from Mrs. Stevenson's formulation of the rule of succession in the priesthood is that actual kinship and not clan membership is the determining factor. This is corroborated by a note on the second division.⁵ After the death of the principal priest of this group, a Pichikwe man, the position was not filled at once because the priesthood as a body were doubtful whether the first associate, his son, who was of the Sun clan, was of sufficiently pure heart; but he was finally accepted. If the same procedure should happen on this man's death, it is obvious that the next incumbent would be neither Pichikwe nor Sun; and so on, the office varying at random from clan to clan in each generation.⁶ If this in-

¹ P. 200.

² Pp. 277, note c, 279.

³ The Ashiwwanni or priests are connected with the Kottikyanne and not with the fraternities.

⁴ P. 165.

⁵ P. 167, note b.

⁶ Mrs. Stevenson mentions a similar situation as regards the priest of the first or north division, the Kiakwemosi (p. 167). A former Pichikwe incumbent was succeeded by his younger brother, of course of the same clan, who had as his first associate and presumptive successor, his dead brother's son, of Turkey clan. It would seem that this heir's successor in turn cannot however be his son, on account of the desire or necessity for the Kiakwemosi being Pichikwe or child of Pichikwe, neither of which this son could be. This highest priesthood is however so distinctive an office that there may be an exceptionally strong feeling favoring its permanent association with Pichikwe, the largest and head of the clans, as the Zuñi call it.

stance can be accepted as typical, and Mrs. Stevenson's formulation of the rule of succession as accurate, it would follow that the Zuñi do not specifically and permanently connect each priesthood, or division of the priesthood, with a clan; and that if they appear to do so, it is for the time being only and because a man's clan has a name and his family as such, or his paternal ancestry, has none.¹ On the other hand, if the priestly offices are definitely linked to clans, Mrs. Stevenson's presentation cannot be exact.

My own information leads me to the conclusion that the Zuñi do connect each priesthood with a clan; but that this connection often exists in theory rather than in the actual personnel of the priesthoods. The prospective successor and other associates of the ranking priest of each priesthood are sometimes his sons; sometimes his brothers or his sister's children; and sometimes not relatives at all. Thus the principles of kinship in the male line, of kinship in the female or clan line, and of lack of kinship, are all adhered to at different times. To determine the precise relative potency of each, would require more detailed information of an intimately personal nature than I have yet been able to secure.

On the other hand, each set of priests possesses, or rather, operates with, an *ettonne* or fetish. These cotton-wrapped bundles of pieces of cane, containing various sacred or precious substances, are sometimes enclosed in feathers, normally kept in jars of special design, and handled or exposed only on occasions of extreme ritualistic importance. These *ettowe* are preserved in specified houses, where they are believed to have reposed since the Zuñi settled at I'tiwawa, their present town; and if a family abandons a house, at least the room in which the *ettonne* lies is usually kept in repair, and the associated priests continue to "go in"² there. As usual at Zuñi, however, acts do not conform strictly to plan: and there are cases of *ettowe* having been removed. That of the Pekkwinne necessarily changes with each new incumbency.

Now these fetishes are on the whole linked, in the native mind, with clans — whether because each house belongs to members of a certain clan, or because of what tradition reports, or from a mere impulse toward elaborateness of schematization, I do not know. Mrs. Stevenson says:—³

While an *ettone* may pass from a shiwanni of the parent clan to one of the chil-

¹ The marked tendency toward descent from father to son in the priesthood as contrasted with the reckoning of female descent in house ownership and clan, will be of interest to those who are still wrestling with the problem presented by the old conception of the matriarchate.

² This is the literal meaning of the Zuñi word, *kwatto*, which Mrs. Stevenson renders "go into retreat."

³ P. 164.

dren of the clan, it remains in the care of a woman of the parent clan...this office passing from mother to daughter or from sister to sister.¹

It therefore seems probable to me that it is through the fetishes, primarily, that each set of priests is more or less associated with a clan. This is borne out by two circumstances. First, each fraternity also possesses an *ettonne*, and it is the clan affiliation of this that determines the clanship of the officers of the society, when there is any prescription at all. This correlation has already been discussed. Then, there is a third series of *ettowe*, which belong and relate specifically to clans. These are perhaps less sacred than those of the fraternities, and almost certainly not esteemed as are those of the priests; but they are also accorded a high degree of veneration.²

The prime importance of the fetishes in general is also manifest. I believe that the truest understanding of Zuñi life, other than in its purely practical manifestations, can be had by setting the *ettowe* as a center. Around these, priesthoods, fraternities, clan organization, as well as most esoteric thinking and sacred tradition, group themselves; while, in turn,

¹ In narrating the circumstances of an inspection of a fetish, Mrs. Stevenson tells of precautions observed to maintain secrecy, "there being no surety against intrusion, for, according to the custom of the Ashiwi, the people of the same clan are regarded as one family and have access to all parts of a house" (p. 164).— This is an irritatingly vague statement. I do not believe that every one of the four hundred members of Pikchikwe would feel at liberty to walk at will over all parts of the premises of any Pikchikwe woman. Privacy and seclusion are not matters settled in any such offhand fashion by the Zuñi; and while the considerations may not be clear cut, and are very little known, they give every indication of being subtle and loosely intricate. I know of a case of a Shiwanni unwilling to enter the room in which his *ettonne* was kept, presumably because the proper ritualistic occasion was lacking, even though he was in anxiety that it might have been mistreated or removed. With the priest observing such scruples, it is not likely that others would follow him merely because the door was open, much less penetrate the sacred precincts of their own accord. The storerooms in which corn is kept are also entered by the owners only with a prayer and barefoot, or at least with one shoe removed; and I am confident that non-inmates, except near relatives, would not presume to go into these chambers without invitation. In some measure, a similar feeling seemed to me to prevail in regard to all inner and under rooms. On innumerable occasions I have not been asked to walk into an adjoining room, though the door was open and an object within was under discussion. In most cases a woman of the house brought the article to the front or living room rather than have it inspected in place. Of course this was the attitude toward one of alien race and a comparative stranger; but the behavior of my introducing friends indicated that it was maintained also toward the Zuñi, with the exception of those who stood on a basis of special intimacy or friendship with the inhabitants. Whether this basis of intimacy is by a convention made to include *ipso facto* all members of the clan, or whether the intimates normally but incidentally happen to comprise most members of the clan as well as actual blood kindred, is precisely the point to be determined. There is nothing to show that Mrs. Stevenson meant to speak specifically in this matter, or had even considered the alternative interpretations; for which reason it is likely to prove misleading to accept her summary statement at face value.

² There are then entirely similar fetishes, all called *ettowe*, for the priesthoods, for the religious societies, and for the clans; which fact alone goes far to support the interpretation that the Zuñi clan is much more a part of a ritualistic scheme than a body of kindred — a ceremonial rather than a socially functioning body.

kivas; dances, and acts of public worship can be construed as but the outward means of expression of the inner activities that radiate around the nucleus of the physical fetishes and the ideas attached to them. In other words, he who knows all that is knowable concerning the ettowe, must necessarily understand substantially the whole of Zuñi society; while familiarity with any of its other phases, except mythology, leads only a certain limited distance. Mythology, indeed, can also be used as a satisfactory starting point and basis, as Mrs. Stevenson has done; but this procedure tends to give priority to native theory and to leave its factive elements uncoordinated, while the ettowe open the direct gate to as coherent a cognizance of the existing society as it is possible to obtain.

The fetishes, naturally, are not discussed readily by the Zuñi with strangers, and my information about them is consequently less complete and probably less accurate than I could wish. The consequence of the subject, however, makes it seem desirable to present all the evidence available.

TABLE 12.

ZUÑI FETISHES.

Number of Ettonne on Map 8	House in which kept	Clan in house	Name of Ettonne	Priesthood, Fraternity, or Clan in 1916
A. Ettowe of the Aciwwanni or Priests.				
1	161	P	Akyakkwamossi awan	<i>Kyakkwamo ssi</i> , or: house-heads. 1. Teiku (Chico), P, mossonna or head 2. Tsa'tsana, P, Kyakkwemossilacci, older than 1, and head until 1915. Not kin of 1. 3. Tsi'autiwa, P, Kyakkwemos-si-ts'anna, sister's son of 2. (4. A woman associate is dead.)
2	360	P	Ky'a'ettonne or PaLto an	<i>PaLto</i> , or: (east) end (of the town) 1. Waihusiwa, S, head 2. Laya'tisi, P 3. Hinna, P 4. Tsaiuhsiluñkya, P None of these are kin (5. A woman associate is dead.)
3	387	Ba	Tcu'ettonne	<i>Onnawa</i> , or: at the road, on which 387 is situated 1. Kuyatsaluhti, P, child of Ba, head 2. La'usi or Nahanitta, Be, child of Ba 3. Hustito (Justito), Ba 4. Mikyela (Miguel), Ba, brother of 3 5. ItseLkai, Ba, brother of 3 and 4 6. ♀ The mother of 3, 4, 5, Ba 7. ♀ Ts'annatsaiti'ts'a, Ba, daughter of sister of 3, 4, 5
4	87	P	Koyyemshi, that is, the ten masks reck- oned as an et- tone, or per- haps kept with an ettonne	<i>Koyyemshi</i> : 1. Lemmi, E 2. Huluiati, E, not kin of 1 3. NaLacci, P, not kin of 1 or 2 4. Tseyyi'i, P, older brother of 3 5. Cintanni, E, younger half brother of 1

TABLE 12 — (Continued).

Number of Ettonne on Map 8	House in which kept	Clan in house	Name of Ettonne	Priesthood, Fraternity, or Clan in 1916
5	(384)	(Ba)	Pikchikwe awan, or Pekkwinne an	<i>Pekkwinne</i> : the "speaker" of the Sun has no associates, and must be Pikchikwe. He is usually known by his title instead of his name. His ettonne is in whatever house he happens to be married or living in.
6	(167)	(P)		<i>ApiLaciwwanni</i> : bow-priests 1. Ts'awela, elder brother bow priest, Cy 2. Wayeku, younger brother bow priest, S These are not, strictly, aciwwanni.
7	163	P	Kyakkyalikwe awan	<i>Kyakkyalikwe</i> : Eagle people (1. K'utci, P, head, died in 1916) 2. Mayyawe, E, present head, kyasse of 1 3. Halliana, Cr, child of Eagle 4. Kwalletci, P 5. Pa'tela, Tb
8	167	P		<i>Upts'annawa</i> : the kiva of that name 1. I'tailuhsi, Ba, head 2. Tcalliwa, S 3. Monta, P, related to house 167 (4. From 1914 to 1916 the present pekkwinne, who is ex house 167-164 and first cousin of 3, served in this priesthood.)
9	40	Cn	Towwakwe awan	<i>Towwakwe</i> : Corn people 1. Pontacci, Cn, head; lives in the house 2. Ci'teuwinni, E 3. Son of Mo'kwella, Cn, sister's son of 1, also in house 40. He is a young man who fills the place of his dead brother.
10	60	P	This ettonne is kept with the sacred figure of Kollowissi, the water serpent	<i>Kollowissi</i> : 1. Kyakkyali, Cn, head 2. Kannawihti, M. 3. Kahtcanni, P. 4. Kwihma, P. 5. ♀ Paulita, P, older sister of 4

TABLE 12 — (Continued).

Number of Ettonne on Map 8	House in which kept	Clan in house	Name of Ettonne	Priesthood, Fraternity, or Clan in 1916
11	68	P (Orig. Ba)	This ettonne is accompanied by a large shell, whence the name of the priesthood	<i>Ts'u'Lanna</i> : Large shell 1. Ha'ts'i, Ba, head; born and lives in house 68. 2. Na'kyawana, P. 3. ♀ Susie, P, born in her father's house, who is a brother of the mother of 1.
12	(372)	(E)	Cummeyekolli masks	<i>Cuma'kwe</i> , or: priests who are officers of the Cuma'kwe fraternity: 1. Ma'asewwi, P, head, also head of the fraternity. 2. Ta'kyakkwekwe, Cr, pekkwinne and akwamossi of the fraternity. 3. Me'li, Ba, piLaciwwanni of the fraternity. 4. ♀ Wife of 2, E
13	186	Cy (Orig. S)		<i>Yattokyakwe</i> : Sun people 1. Tu'ky'ats'o'ta, Cr, head 2. Kuyalu, P. 3. Kuhimats'a, S.
14	391	Tk	Towwakwe awan	<i>Ky'annakwe</i> or <i>Towwakwe</i> : Corn people 1. Lonhose, Cr, head, also head of the Ky'annakwe performers 2. Lomansito (Ramoncito), Cr, younger brother of 1. 3. Ca'lako, Cn. 4. La'silu, P.
15	220	P		<i>Hewwimossikwe</i> or <i>LemaLticillowa</i> : Step-people or Red door 1. Lanuitsawi, P, head, born in 220 2. Hu'pa, E. 3. LemaLticillowa, Tk, living in 220, father of 1; former head 4. ♀ Younger sister of 1, daughter of 3.

TABLE 12 — (Continued).

Number of Ettonne on Map 8	House in which kept	Clan in house	Name of Ettonne	Priesthood, Fraternity, or Clan in 1916
B. Ettowe of the Tikkyawe or Fraternities.				
21	268	P		Ci'wanakwe
22	286	Cr	Ne'ettonne	Ne'wekwe. Fraternity room is in house 7.
23	347	YW		Sanniakyakwe
24	177	Cr	Le'ettonne; cf. also no. 63	Lewwekwe. Fraternity room is in house 84
25	422	Tk	Kokkolanna	} Makkyelannakwe
26			Ci'tsukya	
27			Makkyelanna	
28	139	S	(Horned toads of stone)	Hallokwe
29	372	E		Cuma'kwe
30	312	S		Makkyets'annakwe
31	54	P		Uhhuhukwe
32	119	P		Teikkyalikwe
33	278	F		Peccatsillokwe
34	1	P		K'ocikwe
35	357	P	Ponnepo'anne	Apilaciwanni
C. Ettowe of the Annotiwe or Clans.				
41	96	P	La-pikteikwe awan	La-pikteikwe
42	161	P	Mullakwe awan	Pikteikwe: Kokkokwe-Mullakwe Formerly in 295.
43	506	E	Kyakkyalikwe awan	Eagle. Formerly probably in 190
44			Tonnacikwe awan	Badger
45	186	Cy	Yattokyakwe awan	Sun. House formerly a Sun house
46	398	Tk	Tonnakwe awan	Turkey. Formerly in 422
47	38	Cn	Towwakwe awan	Corn
48	286	Cr	K'oloktakwe awan	Crane
49	267	F	Takkyakwe awan	Frog. Formerly in 278
50	347	YW	Suskikwe awan	Coyote. Formerly in 373

TABLE 12 — (Concluded).

Number of Ettonne on Map 8	House in which kept	Clan in house	Name of Ettonne	Priesthood, Fraternity, or Clan in 1916
51	104	M	Ayyahokwe awan	Tansy Mustard
52			Annakwe awan	Tobacco
53			Ancekwe awan	Bear. Formerly in 33
54	81	D	Cohwitakwe awan	Deer
55	(buried)		Poyyikwe awan	Chaparral Cock. Formerly in 320
56	347	YW	Talluptionsikwe awan	Yellow Wood. Formerly in 342

D. Miscellaneous Ettowe.

61	161	P	Pa'utiwa an	Connected with the impersonation of Pa'utiwa, the leader of the gods
62	257		Na'ettonne	Used for the hunting of deer (na'le)
63	38	Cn	Mu'ettonne	Connected with the Muwaya ceremony, with corn, and with the Lewwekwe fraternity
64	81	D		The minor ettonne of the extinct Ts'u'tikkyanne or Shell fraternity; its great shell was buried
65	94	Ba	Pa'ettonne	"Navaho fetish," that is, ettonne associated with enemy scalps in the keeping of the Apilaciwanni

While the Zuñi statement is that each ettonne remains forever in the house where it was first deposited on the founding of the "middle place," there have been many shifts in recent years, and no doubt formerly also. The priestly fetishes being the most sacred, their removals take place least frequently, but even they occur. Ettonne number 2 was long kept in a rear room of house 360, and its priests "went in" there. This house is now vacant; the priests use part of adjoining 357 for their retreat; and the fetish may have been moved too. The Pekkwinne's ettonne, number 5, is of necessity movable; he "goes in" with it wherever he happens to live; when he is inducted into his office, he is taught about his ettonne, and then carries it to his home. Somewhat the same seems to be the case with the next set of priests, the two head bow priests. I do not know if they possess a specific ettonne; but they are counted as "going in" like the others, so it is likely that if they have no regular ettonne for the purpose, they use an

equivalent. The location of this, however, changes, just as the personnel of the two participants alters according to the happenings in their society, the Apatlashiwanni, and not according to succession in a self-perpetuating body of priests. The present elder brother bow priest formerly "went in," with his colleague, in house 186, the home of his relatives; now he enters house 167, where he is married. Both these houses happen to contain other priestly ettowe. Should he remarry, he would no doubt "go into" his new abode; and his successor will do the same. Finally, the eleventh set of priests, who are officers of the Shuma'kwe fraternity, and whose ettonne seems to be the Shummeyekolli or Shumaikolli masks, "go in" at their fraternity headquarters; and this was recently moved from house 354 to 372.

The fraternity fetishes are kept in the fraternity houses, except in two cases mentioned in the foregoing list; and as several of these societies have changed location in the past generation, as discussed below, and probably all have moved at one time or another in the past, their ettowe cannot be regarded as more than temporarily fixed.

The clan ettowe, finally, appear to shift with still greater readiness. Number 42 was formerly in house 295. When this ceased to be inhabited, the fetish was brought to house 161. The shift of number 56 from 342 to 347, of 53 from 33, of 43 from 190 to 506 outside the pueblo, are similar cases. The transfer of the Turkey and Frog fetishes, numbers 46 and 49, was not even necessitated, for their old houses remain inhabited. The removal of number 50, the Coyote ettonne, is illustrative. It was in 373. Most the inhabitants of this house moved to 186, but an old woman remained behind. The reason that the Coyote ettonne was not brought into 186 is presumably that this was an original Sun house and still contains the Sun fetish, number 45. In 1915-16, however, the old woman in 373 died, and the house was sold by her descendants in 186 to Corn people. Thereupon Tsa'wela, of house 186 though married in 167, one of the leading men in Zuñi in virtue of his office of elder brother bow priest, as well as a member and officer of the Sanniakyakwe, deposited his clan ettonne in the house which harbors the latter fraternity, 347. Thus the Coyote ettonne now rests in a Yellow Wood house, merely because of the individual society memberships of a dominant personality in the clan.

The Chaparral Cock ettonne, number 55, no longer exists. This clan inhabits only one house. On the death, some years ago, of the brother of the old woman who is the matron of this house, the fetish was buried in the river. Were the clan actually on the point of extinction, this procedure would be intelligible. But the Chaparral Cock house contains women; and the death of its leading male member would not affect its vitality. The motive of the act thus remains obscure; but similar things are likely to have happened before. Compare the fate of the major mate of fetish 64.

On the other hand, a new expansion of this clan might lead to the making of a

new fetish — much as the Koyyemshi masks that constitute the equivalent or accompaniment of ettonne number 4 were re-manufactured a few years ago and the old set buried. In the same way, entirely new fetishes must have been made when the Chikkyalikwe fraternity split from the Uhhuhukwe, or the Peshatsillokwe from the Makkyets'annakwe.

A comparison of the clan memberships of the priesthoods in 1916 with those given by Mrs. Stevenson for 1896,¹ shows many changes: —

1916										1896									
1 (P)	P	P	P							P	Tk	P						P ♀	
2	S	P	P	P						(P)	S	P	P					P ♀	
3	P	Be	Ba	Ba	Ba	Ba ♀	Ba ♀			Ba	Ba	Ba	Ba					Ba ♀	
4	E	E	P	P	E					E	E	E	E					E ♀	
5 (P)	P									P									
6	Cy	S								E	Cr	E	E					E ♀	
7 (E)	E	Cr	P	Tb						E	E	E	E					E ♀	
8	Ba	S	P	(P)						P	P	P	P					P ♀	
9 (Cn)	Cn	E	Cn							² Cn	Cn	M	Cn					Cn ♀	
10	Cn	M	P	(P)			P ♀			³ Ch	P	Cr	S					M ♀	
11	Ba	P					P ♀			S	S	S	S					S ♀	
12	³ P	Cr	Ba				E ♀			Cn	Cn	Cn	Cn	Cn					
13 (S)	Cr	P	S							Cn	Cn	Cn	Cn	Cn				Cn ♀	
14 (Cn)	² Cr	Cr	Cn	P						Cn	Cn	Cn	Cn					Cn ♀	
15	P	E	Tk				P ♀												

From a statement of the order of retreat of the several priests given by Mrs. Stevenson for 1891,⁴ it appears that this is also the sequence which she has followed in her enumeration of the priesthoods themselves.⁵ As this is also the order in which the present priests are enumerated by me in Table 12, it follows that the two foregoing lists are arranged on the same plan. The discrepancies are so marked, especially toward the end, that it must be concluded that the Zuñi in twenty years have altered this plan, that is, that the priesthoods in 1916 no longer "go in" in the same sequence as in 1896 or 1891. That such change is actual, and not merely an apparent result due to imperfect information, is established by the fact that for the first ten of the fifteen priesthoods the order cited to me was really fulfilled during my residence in Zuñi in the summer of 1916.⁶ The precise changes,

¹ P. 167.

² Ky'annakwe.

³ Shuma'kwe.

⁴ P. 180.

⁵ P. 167.

⁶ The tenth or Kollowissi priesthood went in on August 10, the day of my departure from Zuñi. I owe the following calendar to the pains of Mr. Leslie Spier: August 18, Cuma'kwe, number 12; August 22, Yattokyakwe, number 13; August 26, Towwakwe, number 14; about August 31, Lemalticillowa, number 15. This leaves set 11 unaccounted for; but I conjecture that their retreat began on August 14, which would yield the place in the series that informants had previously stated to me they occupied.

and their no doubt largely personal causes, would throw much illumination on the problem of how a complex organization is handled in fact in a "primitive" society; and I regret that I cannot follow the matter up. My own data are limited, and as Mrs. Stevenson specifies neither the fetishes, priests, nor houses involved, positive identification cannot be carried far and any exact comparison is impossible.

I am not clear whether my sixth group corresponds to Mrs. Stevenson's sixth or seventh or has no equivalent. As already stated, the two bow priest members of this set are priests only by courtesy; and their "going in" is wholly constructive. As the Zuni put it, they walk about, but are said to have entered. In Mrs. Stevenson's time, Naiuchi was elder brother bow priest, corresponding to my number 1 of set 6. He is evidently the Eagle head of her set 6, and his son Halliana the Crane clan first associate of the same group. In my list, however, Halliana is number 3 of group 7. I suspect that Naiuchi happened to be both head of a priesthood and head bow priest; and that the terms of his two "goings in" being consecutive, he perhaps served them concurrently, or at any rate without intermission, so that they seemed as one.¹ This would account for my having one more priesthood than Mrs. Stevenson.

The first six sets of priests are te-k'ohannakwe, "day people"; the remainder te-kw'innakwe, "night people." My informants, none of whom were ashiwanni themselves, in general denied that the six groups of day people were designated by reference to the directions North, West, South, East, Up, and Down, as stated by Mrs. Stevenson. I have no doubt she is correct. But her information is esoteric; mine reflects the appellations current among the people, with whom the activities of their priests are a subject of daily conversation.

In general, Mrs. Stevenson's data and mine differ on several points.

1. Her priesthoods consist uniformly of four male members.² Mine vary from two to five,³ the minority comprising four.

2. She cites a woman associate for every priesthood except the Pekkwinne's and the twelfth.⁴ I was told of only six women in five priesthoods.

3. A majority of her priesthoods consist wholly of members of one clan; and none includes more than one associate of divergent clan.⁵ According to my list, nearly every priesthood is partly mixed as to clan affiliation, and several wholly so.

¹ Mrs. Stevenson, p. 180, note a, merely states that "the elder and younger Bow priest also make a retreat at this season," *i. e.*, while the sixth priest is in.

² The fifth, that of the Pekkwinne, is a specified and assured exception. For the first, she expressly mentions three incumbents and a vacancy. The twelfth comprises five males, but is exceptional in lacking a female associate.

³ Not counting sets 5 and 6, the Pekkwinne and bow priests.

⁴ Compare note 1.

⁵ Except the tenth, whose membership is determined by the extraneous consideration of whom the Shuma'kwe fraternity has elected to office.

Decadence of system will account for only part of these differences; and I doubt whether real breaking down has been operative at all. It is obvious that Mrs. Stevenson's list is far more regular at all points, and conforms better to some native theory.

SUMMARY.

It appears, then, that the clans of the Zuñi stand in relation to the various fetishes possessed by the nation. Probably through these fetishes, the several priesthoods are given considerable but variable clan coloring. The occasions on which clan ties enter into other tribal ceremonial are fairly numerous; but as for the fraternities, their membership as well as their ritual are practically free from any relation to clans, except in so far as choice of certain officers, and consequently performance of certain actions, is clan limited through associations between particular clans and the fetishes of the fraternities.

I believe that the foregoing facts bear out my interpretation of the Zuñi clan as a body of mildly social type with prevailing if not important ritualistic functions, these functions however being exercised by individuals in virtue of their clan membership and never by the clan as a body. It is also significant that in a considerable proportion of instances, perhaps one time out of three, it is not clan membership, but the clan affiliation of the father, that determines the choice of the individual selected for the fulfilment of a temporary or permanent ceremonial service.

RACING.

The Zuñi races or *illuha* (running), in which each side kicks a short stick or *tikkwanne* over the course, are of four kinds. The first race in spring, *u'pawa*, is a ceremonial competition run with six sticks, each kicked by members of one *kiwwitsinne* and painted with the color of the cardinal direction of that *kiwwitsinne*.¹ Next follows a race in which the clans compete, *annotiwe illuha*.² After this, racing is thrown open. That ill-defined body known as the *Showekwe*, or individuals among it, arrange races which are publicly announced, heavily bet on, and conducted with ceremonial observances.³ Finally, impromptu and informal races, usually

¹ Stevenson, p. 318.

² *Ibid.*, p. 321.

³ *Ibid.*, p. 322.

over a shorter course, are got up now and then by those whom desire of excitement impels.

In the clan race, there is a stick for each clan and sometimes for subdivisions of clans. A set of models of these *tikkwawe* made for me, are of the heavy *assiye* wood employed in all important contests, but unpainted. The bark is left on, except for a peeled ring in the middle; and near one end a rude design of the object the clan is named for is cut into the bark (Fig. 1). In addition, every participant has his back whitened, I was told, and a similar design is then made on it by erasure.¹ These are the only instances known to me of a pictorial or plastic representation of Zuñi clan totems.

GOVERNMENTAL FUNCTIONS OF CLANS.

The Zuñi civil government is accorded recognition by the Office of Indian Affairs, as it was likewise, probably, by the Spaniards and Mexicans; but gives every indication of being in substance a native institution. It is concerned mostly with affairs that relate to property, property rights, and equities in material things, both individual and communal. This is an interesting field of investigation, but, like the related one of Zuñi economic system, too special and intricate to be treated as a mere adjunct of customs of blood and clan. I will only say that so far as my experience goes, all property at Zuñi, including fields, corrals, houses, and personal effects, are owned by individuals or household families of blood kindred, and that whatever is not so possessed, such as streets, plazas, and wells in town, the ruin of the mission church and its burial ground, unused land, or game and wild growths upon it, are owned communally; that is, they are free to any Zuñi to enjoy the use of, and actual proprietorship is maintained only against aliens. This leaves nothing that can be considered clan property.

Analogously, the relations of the clans to the civil government are of the slenderest. The only points of contact of which I am aware are two. The governor and lieutenant governor are not chosen from the same clan, and the four or five aids of each, who with them constitute the civil council, are, at least in theory, also of different clans. Secondly, the choice of the officers is made by certain priests of certain priesthoods, which are, as already described, clan limited, or more exactly, associated with clans.

The governor is called either *annula* or *tapupu*. The former word seems to be Zuñi, the latter Keresan in origin. The lieutenant governor is the

¹ Mrs. Stevenson, p. 322, says that the clan symbol is painted on the breast, the paternal clan on the back. She also states that *Pikchikwe* runners bear the pattern of the dogwood bush plus a raven or macaw according to subdivision.

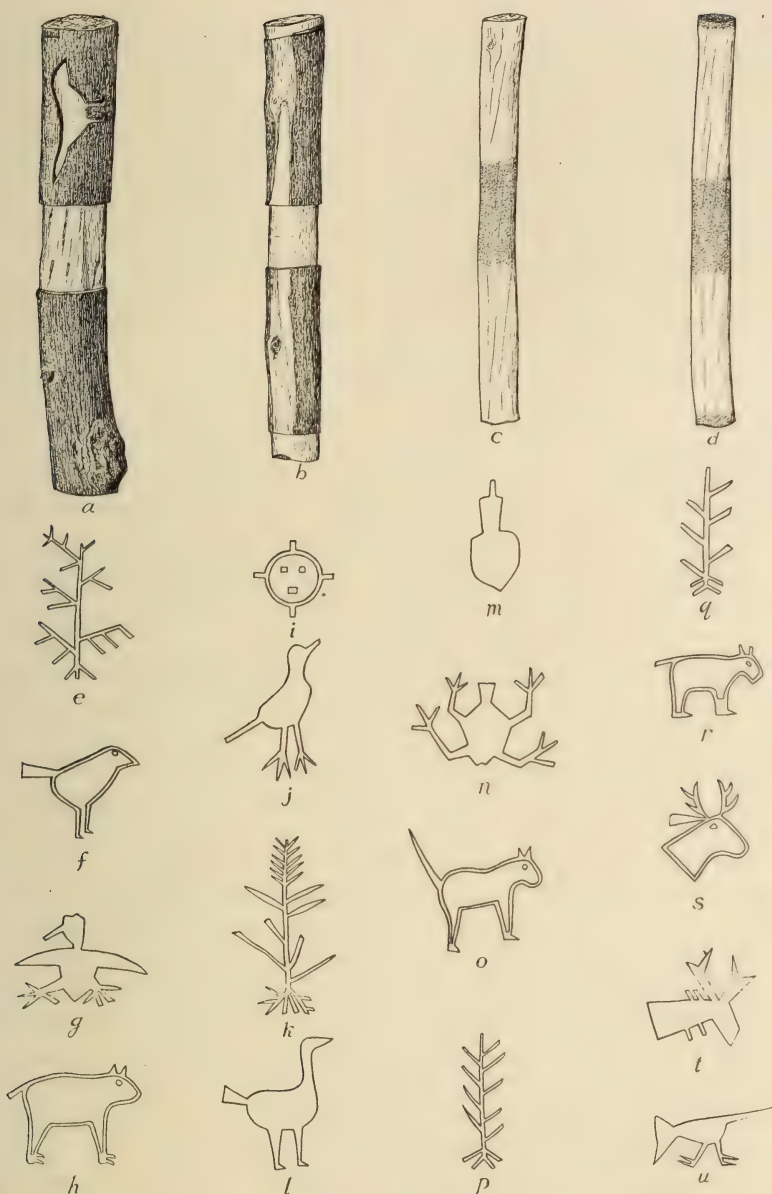


Fig. 1 (50.2-337 a-u). Sticks used in Annual Clan Race: *a* by Macaw division of Pikchikwe clan; *b* by Yellow Wood clan; *c* by older brother bow priest; *d* by younger brother bow priest. Patterns cut in other sticks: *e* Dogwood (Pikchikwe); *f* Raven (Pikchikwe); *g* Eagle; *h* Badger; *i* Sun; *j* Turkey; *k* Corn; *l* Crane; *m* Pumpkin (Crane); *n* Frog; *o* Coyote; *p* Tansy Mustard; *q* Tobacco; *r* Bear; *s* Deer; *t* Antelope; *u* Chaparral Cock.

tsippolowe-ciwwanni or "Mexican priest," that is, priest for the Mexicans. He has, in theory at least, a command of the Spanish language; is in special charge of all communal relations with Mexicans; and it is his duty to see that no Mexican witnesses a dance. The aids or deputies are known as tinniante, plural tinniantekwe. This sounds like a good Zuñi word, but Mr. F. W. Hodge informs me that it is in general use among the Rio Grande pueblos, and undoubtedly the Spanish *teniente*, deputy or lieutenant. The generic name for all these officers is yannula, plural yannulakwe.

The officers in the summer of 1916 were these:

1. William F. Lewis	Governor	Crane clan, child of Badger
2. Dick	Lieutenant Governor	Corn clan, child of Bear
3. Wahnanniwa	Deputy to Governor	Sun clan, child of Pikchikwe
4. Osti	" " "	Corn clan, child of Badger
5. PiLLa	" " "	Badger clan, child of Pikchikwe
6. Attets'anna	" " "	Pikchikwe clan, child of Badger
7. Si'utsa	" " "	Corn clan, child of Pikchikwe ¹
8. He'yo	" " Lieutenant Governor	Sun clan, child of Pikchikwe
9. Mu'tu	" " "	Badger clan, child of Turkey
10. I'ts'eya	" " "	Badger clan, child of Crane
11. Wi'akwe	" " "	Turkey clan, child of Corn

It will be seen that the governor's aids include two Corn clan men, and those of the lieutenant two of Badger clan, so that personnel appears to count for more than clan affiliation, in practice. In general, however, the officers are adequately apportioned to the larger clans.

Old men say that when they were boys, or about fifty years ago, the council comprised only six officers: the governor, the lieutenant governor, a pekkwinne or speaker for each, and a we'aconna or public crier for each. The growth of the council from six to eight and then to ten is laid to increasing relations with Mexicans and Navahos and more extensive scattering of the Zuñi to their three farming districts. This explanation seems to me not wholly valid. But the tendency toward augmentation persists. It is evidenced by the present fifth aid to the governor, as well as by the abortive addition of a sixth. A year or two ago, one of the governor's deputies was chosen to impersonate Hututa, one of the more sacred of the gods. This obligated him to abstain from all quarrels or disputing. He continued to attend council sessions, but without entering into arguments. A substitute, or to speak more exactly, an additional councillor, was "therefore" appointed, to have special charge of the maintenance of irrigating ditches at

¹ Theoretically supernumerary. He was added in the temporary absence of Wahnanniwa, but proving eminently satisfactory in the position, was retained after the latter's return.

the Ojo Caliente farming district. The new nominee died within a month, and no successor to him was chosen. It is said that had he lived, both he and the Hututu impersonator would probably be councillors now.

It may be added in passing, as a matter of wider interest, that the Zuñi in their civil council adhere to the universal Indian principle that no decision is arrived at until complete unanimity of opinion, or at least of expression, is attained. I have the impression that this principle is prevented from degenerating into paralyzed inefficiency by a strong impulse to defer to general sentiment. A fractional minority may voice its opinion at the outset, but will not directly press its contention once the tide has definitely turned against it, no matter how grave the issue; so that in practice the requisite unanimity is almost invariably obtained.

At bottom, Zuñi government is theocratic, the civil officers being chosen, and if necessary deposed, by the highest priests. Mrs. Stevenson speaks of these as "the first body of Ashiwanni" and makes it to be constituted of "the six Ashiwanni directly associated with the six regions, the Shiwanokia (Priestess of fecundity), and the elder and younger Bow priests, the two latter being Ashiwanni *ex officio*."¹ My informants restricted the appointing body to the head priests of the first four priesthoods, except that from the first or Akyakkwamossi priesthood two associates are included with the head; and sometimes added the older brother bow priest, who is the *sontalu* (Spanish, *soldado*), the executive or military arm, of the priests. I am uncertain whether the bow priest has an official voice or only influence; I suspect the latter. The six priests who held this office in 1915 were numbers 1, 2, 3 of set 1, 1 of set 2, 3 of set 3, and 1 of set 4, as listed in Table 12.²

As regards the discrepancies between Mrs. Stevenson's "first body" and mine, I cannot believe that the *Shiwwannokkya* — the word means "old woman priest" or "priest old woman," and contains no reference to fecundity — had an official seat as a member of the body. She undoubtedly possessed such influence as her position as associate of the highest priesthood would command when joined to the requisite personality. But it appears to me thoroughly incompatible with everything I know of the Zuñi that they should admit a woman to an avowed place in this august body. The position of their women is always ancillary in religious organization — as in the priesthoods and fraternities; and that one of them should be received into the theocratic council when it meets to regulate secular affairs, appears to me as incredible as that a woman should be seated in the civil government. Mrs. Stevenson's work frequently displays distinct feminist trend when it deals with the participation of the Zuñi woman in religious system rather than with her actual status in

¹ P. 289.

² I do not know why in the third priesthood an associate replaces the head. Perhaps he is the former head; or the hereditary one — he was born in the house in which the fetish of his priesthood is kept.

daily life. If the female associate of the first priesthood were so important, it is hardly likely that her place would remain unfilled at present.

The pekkwinne, corresponding to Mrs. Stevenson's priest of the fifth direction, does not have a hand in the selection of officers, the Zuñi told me, because he is expected to devote himself so thoroughly, in thought as well as acts, to his high and consequential religious duties, that he holds aloof from all secular matters.

As to the priest of the nadir, the sixth direction, it has already been mentioned that the incumbent cited by Mrs. Stevenson was also older brother bow priest — just as at present the two head bow priests "go in" in sixth place.¹ Six priests plus two bow priests plus the "Priestess of Fecundity" makes the "eight men and one woman" of Mrs. Stevenson's "first body." But since the sixth priest and first bow priest were the same person in her time, the actual number would have been seven. There must be an error in the reckoning.

On the other hand, I suspect that Mrs. Stevenson is right in including the younger brother bow priest with the older, so far as the latter may pertain to the body. The Ahhayuta, whom the two head bow priests represent on earth, are always described as twins. It seems likely to me that my usually hearing only the older brother bow priest mentioned in actual affairs in 1915 and 1916, is due to one personality overshadowing another.

Two distinct general considerations follow from what has been said.

First, since the source of all Zuñi authority, sacred and profane, lies in certain priests; since these are representative of their priesthoods; and since these priesthoods, in native opinion, receive their origin, venerability, permanence, and even name from the ettowe with which they are associated, the depth to which these fetishes underlie all Zuñi life becomes once more apparent.

Second, the distribution and balancing of civil offices among the clans is characteristic of Zuñi procedure. A particular priesthood or ceremonial function may be limited to members of a particular clan; but the total dispositions as to government evince a feeling for an approximately equal representation of each clan in public affairs, or at least a representation roughly proportional to its numerical strength. Once more we gain the conviction that the Zuñi view their clans not so much as essential units of consanguinity or locality which are conglomerated into a mass while retaining their separate privileges and activities, but rather as coördinated divisions, with special but parallel and equivalent functions in a communal entity.

For the choice of the word "equivalent" in the last statement, I am indebted to Dr. A. A. Goldenweiser. It appeals to me strongly that the

¹ An exact resolution of the differences between Mrs. Stevenson and myself on this point is impossible at present because her priesthoods are designated only by directions, whereas my informants insisted on denominating them otherwise. I noted only one exception. A member of house 387, in which the third or Onnawa priesthood retires, told me that there were four sets of priests for the four — not six — directions, and that those of this house were of the South.

crux of the whole question of what a clan really is, rests in the contained idea. If clans were or had once been separate units, they should possess unequal privileges and different functions, like castes or classes or guilds. Now the overwhelming rule is that they do not exercise distinct functions, but essentially are equivalent. The only alternative interpretation remaining is that they once were separate bodies but that since their union an equivalating tendency has assimilated them. But, once an equivalating tendency is posited, there is no valid reason, in fact it is gratuitous and arbitrary, to assume that the tendency is only late and secondary; and if it be granted that the tendency is old and primary, there is no logical need for bringing originally distinct clan entities into the argument at all. All that remains to be accounted for is the inclination toward subdivision; and this seems to me to present no difficulty wherever the impulse to systematization, as evinced for instance in secret societies or the Zuñi priesthoods, is present in any strength. It is not even necessary to fall back seriously upon local groups, blood groups, or nicknames. A tendency toward systematization might more or less temporarily make use of such accidental or extrinsic groups as a starting point, and the differences of clan organization among various nations may well in part be due to the diversity of such associated phenomena. But, given the systematizing and coördinating impulse, nothing else is required: it would seize upon the most trivial suggestions and break itself a channel of its own. This is not the place for an exhaustive theoretical discussion; but it is to be hoped that Dr. Goldenweiser will not fail to present at length his happy and fruitful formulation.

PLACE OF THE CLAN IN ZUÑI SOCIETY.

It is impossible to proceed far into the complexities of the social and religious organization of the Zuñi without being impressed with the perception that this community is as solidly welded and cross tied as it is intricately ramified. However far one form of division be followed, it branches off by innumerable contacts into others, without ever absorbing these. Four or five different planes of systematization cross cut each other and thus preserve for the whole society an integrity that would be speedily lost if the planes merged and thereby inclined to encourage segregation and fission. The clans, the fraternities, the priesthoods, the kivas, in a measure the gaming parties, are all dividing agencies. If they coincided, the rifts in the social structure would be deep; by countering each other, they cause segmentations which produce an almost marvelous complexity, but can never break the national entity apart.

Let us take an individual in this society. First to him as to us, in time and probably ultimately in importance, are the ties of blood and of household association. But, basic as these are, they are scarcely organized into a definite pattern: the personal element still outweighs the institutions. But beyond is the clan, into which the Zuñi is born. It includes half his kin, indeed, but only half; and it includes a large group of persons outside the lines of blood. The clan, in turn, is more or less associated, directly or through certain fetishes and the houses that hold them, with certain priestly offices. Our Zuñi may become a priest of a fetish connected with his clan; or, through kinship running counter to the clan scheme, or through mere personal selection, he can be made a member of a priesthood not connected with his clan. If, as is still more likely, he is not a priest himself, he is almost certain to possess a relation to certain priests through the medium of clan and to others through kinship. His kiva is one of six that perform the outward ritual of which the priests hold the more sacred keys; but there is no connection of personnel between kiva and priests. Our individual is a member of the kiva to which the husband of the woman belonged who first touched him on his entrance into the world. Thus father and son, mother's brother and nephew, the several associates of one priesthood, co-members of a fraternity, are likely to pertain to different and more or less rivalizing kivas. The fraternity is entered occasionally by choice; usually by the affiliation and consequent predilection of the near relatives who summon its medical assistance in case of the individual's sickness. The racing and gaming parties are little known; but everything points to their being in the main independent of every other mode of organization.

Opposed to this actual Zuñi condition, is a putative type of social organization which has sometimes been ascribed to the Pueblo Indians and more often implicitly assumed for them — and the same is true of primitive nations in other parts of the world. This hypothesis predicates that a group of kinsmen, whom we may call A, originally from a locality A, now constitute clan A of their tribe; and that, essentially if not wholly, they compose the membership of secret society A, of priesthood A, and of club or kiva A. Such a system could be diagrammed as in Fig. 2. The organization actually found at Zuñi, however, differs at every point. There is no evidence that the members of clan A have come from a separate locality A. They comprise the kin groups a, b, c, d; they furnish members to fraternities A, B, C, D, to the priesthoods A, B, C, D, and to the kivas A, B, C, D. Thus a given individual of clan A may be of kin group b, father's clan C, fraternity D, priesthood E, and kiva F; his next clan mate that we encounter, will be perhaps of blood group d, father's clan E, fra-

KIN A	LOCAL GROUP A	CLAN A	SOCIETY A	KIVA A	PRIESTHOOD A
KIN B	LOCAL GROUP B	CLAN B	SOCIETY B	KIVA B	PRIESTHOOD B
KIN C	LOCAL GROUP C	CLAN C	SOCIETY C	KIVA C	PRIESTHOOD C
KIN D	LOCAL GROUP D	CLAN D	SOCIETY D	KIVA D	PRIESTHOOD D

Fig. 2. Hypothetical Scheme of Zuñi Social Structure.

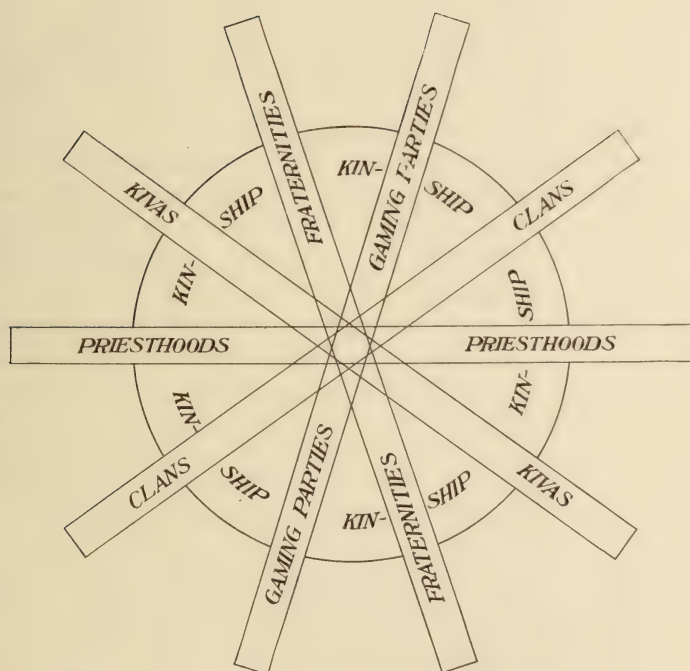


Fig. 3. Actual Scheme of Zuñi Social Structure.

ternity F, priesthood A, kiva B. By the time the tribe has been gone through, every clan, society, priesthood, and kiva is thus likely to be connected, in the person of one or several individuals, with every other, and each with each in about equal degree; but — and this is the significant point — the connections are almost wholly through individuals as individuals, and with reference to the national organization as a solidary scheme. Connection between group and group as such is always faint, often lacking; the plan of the fabric throughout seems calculated to avoid it. Fig. 3 may serve to contrast this Zuni type of social structure with the previous hypothetical one.

It cannot be denied that the various forms of bodies — clans, societies, and the like — do have definite contacts. They could not co-exist within the same culture without maintaining relations, and these relations may now and then lead to a partial identification or a temporary coincidence. In the preceding pages I have piled up every possible case of bond between clans on the one hand and the various religious organizations on the other. It would be as unwise as unfair to deny significance to these contacts. But, bulky as my list of instances may seem, it comes only to a minute fraction of the potential cases. The actual contacts of the clans with the societies, bodies of priests, kivas, and other forms of religious machinery, are vanishingly small as compared with the total surface which this machinery exposes. On this point there can be no question. Let the reader compare the vast and intricate religious organization presented by Mrs. Stevenson, often in the most summary fashion, with my minutely analyzed but after all poor and scant lists of all cases where the clans stand in relation to this organization, and the slenderness of the rapprochements to the total bulk is overpoweringly evident.¹

As a matter of fact, then, we have only relatively few of the potential instances of relation between the various types of Zuni social and religious organization actualized. As regards interpretation, two alternatives are before us. We can look upon the occasional relations as the significant points, as the original nuclei from which all the remainder of the structure emanated as a meaningless growth. Or, on the other hand, we can look upon the large outlines and grand diversifying currents of the existing plan

¹ An interesting parallel, which merits exhaustive inspection, is the relation of the fraternities to what I have called the tribal religious organization. That a considerable number of cases of such relation exist, is clear from Mrs. Stevenson's work. An extreme instance is the constitution of the officers of the Shuma'kwe society into a recognized priesthood. To ignore such facts altogether, would be unwarrantable. But they acquire meaning just in proportion as they are seen to be irregular or unusual; in other words, in proportion as the basic gap between fraternal and tribal organization is clearly and justly recognized, — as I am of the conviction that it was recognized by Mrs. Stevenson, although her formulation thereof lacks the explicitness and emphasis that it might have had.

as basal and significant, and attach to the minor cross links between them only such weight as the exceptional always deserves.

It remains to inquire the motives that have led to the frequent choice of the first alternative, even more, perhaps, in ethnological works of a general character, than in studies dealing with the American Southwest. I can conceive three.

One is the instinctive inclination of the immature and unschooled mind to find attraction as such in the singular, the unexplained, and the mystifying rather than in the correlated.

Next, and more specific, is the tendency, already commented on, to assume that the past must have been not only different from the present, but contrary to it. What is now exceptional was once regular; what is vestigial, must have been not merely functional, but of primary functional importance; what is now consequential, must have been inconsequential or non-existent. It is clear that once this method of interpretation is adopted, it can be eternally applied without let or hindrance. Every irregularity, every subsidiary feature even, can be construed as a survival, and every survival as evidence of a former different plan, much as the mythologizing Indian concludes that because rivers now flow downstream, they must in the beginning of time have flowed up; and every eddy is there as a proving survival.

As a third motive, I would assign intellectual sloth. If every society, club, priesthood, and civil office can be resolved into a clan or function of a clan, and every clan into a group of kinsmen or coinhabitants, as simple a scheme is attained as it is possible to devise. Where we can postulate coincidence, we are freed from the obligation of examining subtle and varying relations. It is as if we could reduce cylinder, piston, valves, rod, intake, exhaust, and regulator of an engine all to the formula of a tube: the machine would be endlessly easier to picture and conceive. Whether it would run, can unfortunately not be put to the final test of practical application in a descriptive science like ethnology, so that any indiscriminating mind remains at liberty to proclaim its formula of the tube to other minds that abhor the exertion of discriminating, without being reduced to the confusion of obvious exposure. As a matter of fact, however, it requires only a low degree of intellectual perception to realize that a social machine constructed on the simplified parallel and coinciding plan of Fig. 2 could not work. Not only would a community organized on this scheme inevitably break apart; it would never be a community; just as a series of organs, each of which performed all the functions of all the others, would constitute as many individuals, and not a single one. A small amount of reflection shows that the interwoven structure of society illustrated by Fig. 3, or some considerable approach thereto, is a logical necessity.

The size of the Zuñi community, and its reduction to a single pueblo, may have caused its social fabric to be more intricately knit than usual. But the relations of all the Southwestern tribes are so intimate, that it is practically certain that the main features of the plan of Zuñi society recur among the other Pueblos, and in large measure even among the so-called nomadic peoples. As regards more distant nations, whose historical connections with those of the Southwest are remote, such inferences cannot be drawn; but the theoretical considerations adduced compel the conclusion that however different the strands or elements of their societies, the interrelations of these elements must be in some measure analogous to the interrelations which the elements of Zuñi society manifest.

IV. THE TOWN.

In order to ascertain the distribution of clans in Zuñi, it proved necessary to make a new survey, the detailed results of which are shown in Map 6. The town has altered in too many respects since 1881 to make Mindeleff's excellent plot of that date serviceable at present. Moreover, experience proved informants to be very inconsistent in placing families in the past. One man thinks of conditions twenty years ago, another of a period twice as far back. Even the same informant is likely to have different times in mind as he progresses from one part of the map to another. Finally, so many families have moved from old Zuñi to entirely new homes in the immediate environs, that the locational relations of more than one third of the population could be determined only by means of a new map.

Such a new plot seemed worth while also because it would show in detail changes in the shape of the town and would reveal its process of growth during a generation. I tried, but soon abandoned the attempt, to draw over the Mindeleff map to conform with the pueblo of 1915. Superficially, the old map and the new are remarkably alike; but the vast majority of exterior lines and many of the interior lines have been altered, at least by a few feet and often by much more.

Finally, the new survey gave an opportunity of introducing elevations, which are not indicated in Mindeleff's survey. Mindeleff does show by shading three or four levels of stories. At first glance, this appears much the most satisfactory, because the most conspicuous method; but it is entirely inadequate for detailed service. Rooms are of very different height, so that adjoining two story and three story houses sometimes are of nearly the same elevation, even when they are built upon the same foundation. Where the ground slopes, as it does over a great part of the pueblo, the roof of the house with fewer stories may actually be above the one with more stories. There are also many cases of roof levels being separated by about half the height of a story, even within the limits of one and the same house.

The only accurate method of recording elevations seems therefore to be by the entering of absolute figures related to a fixed base. It would have been of the greatest interest if these could have been supplemented by an indication of the number of stories under each roof. This, however, proved impossible. The Zuñi regard their roofs as public highways, and were entirely indifferent to a survey being made. Their homes, on the other hand, they feel to be private, and any attempt to enter all the inner

and lower chambers at will would be impossible, except upon the exercise of authority, backed by force. They are generally ready to tell the number of rooms which their house contains and the number of stories to which it descends; but the magnitude of the town, and the involved expenditure of time, precluded this method being attempted on any general scale.

THE SURVEY.

The survey was made for me in 1915 by Mr. Mark Bushman of Gallup. The first step was to locate certain fixed points which would correlate the new survey with Mindeleff's map. The highest roof in Zuñi, the kyapachunna, from which the councillors make public announcements, was definitely placed on the Mindeleff map by measurements and by a line run from the head or south end of the K'ochina plaza (the court entering the main block from the north), to the head of the right-angled alley which penetrates the same block from the south. In Mindeleff's time this high level appears to have included a number of roofs. At present, it covers merely one small room which looms an entire story above the surrounding ones. A spot near the west end of this roof was designated as point X.

Certain house corners and fixed points, mostly on the exterior lines of the pueblo, were then found, whose appearance would indicate that they had not been altered since the day when Cushing first came to Zuñi. Only such of these points were used as the lieutenant governor, an elderly man, stated positively to have undergone no change. These points have been designated as stations A to I.

From point X, the distance, direction, and downward angle of every corner and jog of the exterior line of the main or northwestern block were read by transit and stadia wires on a thirteen foot rod and then plotted to the computed scale of the Mindeleff map—43 feet to the inch. The outlines of the smaller southwestern blocks were also obtained from X. This point was then connected by triangulation with Y, on the highest roof in the southeastern block, and with Z of the highest roof of the northern block. From Y the exterior angles of the three eastern blocks were sighted and plotted, and from Z those of the north block. The magnetic deviation assumed was that of Gallup, $13^{\circ} 20'$ east. A subsequent solar observation indicated about 14° . It is therefore possible that the arrow on the map points from one half to two thirds of a degree east of true north.

With all the exterior lines of the seven blocks of the pueblo proper plotted, the interior walls were obtained with a steel chain and entered on the plot, affording at the same time an opportunity to check the instrumental results.

Mindeleff states his survey to have been made primarily with a compass and a tape.¹ On the whole, I believe this method to be the more accurate, but it must also involve very much more time. The ideal procedure probably is to work by instrument and with a tape at the same time, utilizing the results of each method to check the other. My experience, however, leads me to estimate that a period of at least a month, and perhaps considerably more, would be required for an accurate survey of Zuñi made in this way by an observer competent to use a theodolite or a plane table and operating with an assistant. As Zuñi is by far the largest of all existing pueblos, this method may however be much more readily applicable to surveys elsewhere.

I have also made no attempt to indicate the deviations from straight lines that characterize many Zuñi walls, but have merely drawn a line between every two corners. Here again, it is not that the results would have been unimportant, but that time was not available. Many Zuñi walls are still somewhat curvilinear. On the whole, however, the town is now laid out on more rectilinear lines than in 1881. The newer and larger houses, in particular, including most of those that face on streets or plazas or the exterior of the pueblo, have substantially straight walls. Some of the building that was observed was freehand, but in other cases, as in the reconstruction of the Chuppawa Kiwuitsinne, the greater part of whose new walls was erected during the summer of 1915, a string was stretched and the wall run perfectly true. This is seemingly not only an innovation, but a recent one.

In a few cases, rooms are probably more rectangular than they appear on the map. This statement applies particularly to several houses or rooms in the interior of the main block; whose diagonal shape is, at least in part, due to the surveyed exterior lines of the block not tallying exactly with the interior measured ones. In this class are rooms 100, 99, 114, and 60. Most of these are either roofless ruins or standing houses adjacent to tumble-down structures whose accurate survey is particularly difficult.

The elevations were obtained by running levels or laterals by instrument to some seventy selected points, mostly on the ground, but to the number of about twenty at roof corners. These have all been computed and entered on the map with reference to a United States Topographic Survey bench mark, 6281 feet above sea level, reckoned as zero. Elevations below this are designated as minus. This bench mark is just outside the limits of the large map (number 6), but will be found indicated in Map 7 in front of house 534a, to the northeast of the town. All the elevations obtained instrumentally are underlined on the map.

¹ Bur. Am. Ethn., Ann. Rep. VIII, 44, 1891.

All other elevations were subsequently obtained by the writer by means of a rod, and computed with reference to those instrumentally determined. All these are given without underlining.

All levels have been reduced to the nearest foot or half foot, the latter indicated by a dot after the number.

There are three levels of importance, besides the bench mark, that barely fall within the frame of Map 6. The bridge which crosses Zuñi River somewhat south of the southwestern corner of the pueblo has an elevation of $-13\frac{1}{2}$ feet at the northern end of its floor. The bed of the river immediately below is $-21\frac{1}{2}$ feet. North of the village is a large well, still the principal source of water supply for the greater part of Zuñi, and shown on Map 7. The northern rim of this has an elevation of -7 feet, while it is 14 feet farther to the water level, or -21 feet in all. This makes the water in this well of substantially the same level as the water running under the bridge, and no doubt somewhat below the level of the river a few hundred yards farther up near the eastern end of the town. It is therefore likely that this well is not actually a spring, as it is sometimes called, but that it is filled by direct seepage from the river which passes deep under the town. This fact would explain the apparent purity of the water, which at first sight seems remarkable in view of the well being situated practically at the foot of the largest garbage pile of the several that surround Zuñi.

The smaller scale map, number 7, showing the newer and often detached outlying houses within a quarter of a mile of the old pueblo, is based on sights, obtained as before, from points X, Y, and Z, according to the position of these houses. One corner only of each house or block of houses in these suburbs was sighted and entered; and from this corner each house was subsequently plotted on the basis of measurements with tape and compass. The pueblo proper on this map is merely a reduction from the large scale plot of Map 6.

To prevent error, it should be stated that the so-called scalp house or shrine in which scalps are preserved was said by my Indian informants to have been moved in recent years from a position some 200 yards nearer the town than it now occupies.

Mr. Bushman also obtained for me the following readings taken from point X:—

The main building of the Black Rock Government School lies $68^{\circ} 30'$ east of north. The shrine on the summit of the ruin Mattsakya, 86° east of north. The southern pinnacle of Towwayallanna, $71^{\circ} 30'$ east of south. The shrine south of Pinnawa, $60^{\circ} 40'$ east of south. The shrine Heppatinna, a short distance across the river, 29° west of south.

Nearly every Zuñi roof possesses a slight pitch and not infrequently the slope from one edge to another amounts to a foot or more. This is particularly the case over large rooms or where several houses happen to have their roofs without any step between them. In general, the figures given for roof elevations must therefore be taken to apply only to the portion of the roof in which they are entered. This circumstance also accounts for the fact that adjacent roofs whose given levels differ by as much as a foot have sometimes been connected by a double-pointed arrow to indicate that the roofs are flush along their line of contact.

I should have very much liked to delineate in full the contours of the ground upon which Zuñi is built, but was forced to abandon this intention because of the time it would have required. The highest unbuilt point on the knoll, designated as W, is a little over twenty feet above the bench mark base, or somewhat more than forty feet above the present river bed. This high point is a little north of the northern edge of the north block, near where the crumbling adobe base of an old outhouse is still discernible. From near this point the ground falls sharply to the north about twenty-five feet. This northern face of the knoll is one of the principal places of disposal of refuse at present.

After the alley which separates the northern from the main or north-western block has been entered, the ground slopes upward until in the corner of K'ochinawa or Rat plaza an elevation of over twenty feet is reached. In Mindeleff's map, the southern wall of this K'ochina court was continuous. At the present time it is broken through and opens into another, apparently nameless, court to the south. The slope still is upward as one goes farther into this court, until an altitude of twenty-eight feet, or nearly fifty feet above the river bed, is reached. This court is however said by the Indians to be well above ground level. When the houses that formerly occupied this area were abandoned and pulled down, their lower two stories, or possibly in some cases three, were filled in, presumably because this was an easier procedure than removing the entire content of their walls. This high level is therefore distinctly an artificial one.

A similar proceeding is often employed in the case of the lower rooms of houses that are left standing and inhabited. Inner dark chambers are less used than formerly, now that the people have become accustomed to doors and windows. In addition, it is likely that added stability was given to the upper stories of a high house by sinking its lower story completely in made ground. Part, if not all, of the foundations of house 163a have been filled in in this way.

It is likely that this was an old procedure. The streets and courts of the town gradually rose from the accumulation of refuse, the wash from

earth roofs and mud plaster walls, and the blow of sand and dust, until chambers that originally were level with the ground became partly or wholly subterranean. New stories were reared upon the old walls and the lowest floors filled in even before the modern reconstruction of the town began.

CHANGES.

The rapidity with which a pueblo like Zuñi changes in detail, while preserving the same general outline and appearance for generation after generation, is really remarkable. I have already alluded to the surprising similarity of my map to that of Mindeleff, in spite of the fact that only two thirds of the population remains within the old town limits, and that certain minor discrepancies have been produced in the maps by the difference in the method of surveying. This general conservatism is however offset by the readiness with which changes of a few feet are made in the lines of any particular house. Mr. Bushman's survey was begun on July 13 and the plot finished on July 19, 1915. The same night there was a rain which was followed by several others. My last observations on the town were made on August 8. In the scant three weeks' interval, at least half a dozen houses had fallen or had been torn down.

On August 8, for instance, the wall between rooms 13 and 10 in the main block was being rebuilt. This had given every indication of having been untouched and abandoned for some time previously. The upper story of room 46 in the same block fell in a rain of August 7. The débris was being removed on the following day. The new roof on this house would therefore henceforth be level with the adjoining houses 45 and 48 instead of rising above them a story. Rooms 62 and 63 had, on August 8, been torn down since the survey was made, and 62a was actually in process of demolition. 143, which had stood as an unroofed ruin since the time of my advent to Zuñi, was on this same day being rebuilt. What remained of the walls had been thrown down and a new foundation was being laid. This foundation however extended north to meet room 141, obliterating the small alley which at the time of my survey, as well as in Mindeleff's day, separated these two rooms. The fixed point A which I was still able to use in my survey is therefore now also a matter of the past. Room X157, also in the north block, had been torn down since July 19 and was being rebuilt along what appeared to be the lines of a still earlier structure on the same site. The present X157 is therefore considerably broader and slightly less deep than the one that stood until July, 1915. In the northeast block, room 327, serving as a storeroom to the family in 328, collapsed during a heavy rain. 327a was an older room of which nothing but the foundation remained. This had been excavated and stone for its reconstruction had been lying piled up for some time. On the collapse of room 327, it was completely torn down and the construction of a larger 327a, to include not only its old area but that of 327 without partition, was commenced, and had made considerable progress by August 8. In the southwestern part of the main block, the

roof of 128 had suffered damage in the storms following July 19 and was being taken down to prevent its collapse. It was stated that this roof would not be replaced. In the southeastern block, rooms 399 and 400 were ruins when the survey was made. Early in August, building was going on in them. The walls had been brought up to a height of $10\frac{1}{2}$ feet and it was stated that the roof was to be nearly up to the level of that of the adjoining rooms, 395, 401, and 405.

The following are a few of the alterations which were made between August, 1915, and July, 1916, and which therefore represent further changes from Map 6. Room 42 has become roofless. The front of 120 is several feet farther back, and only partly reconstructed. Room 61 is a gaping hole, into which rubbish is being thrown. 62, 63, 64 are level with the ground. 62a in July, 1916, was a hole five feet deep across which stretched the bare rafters of the former ceiling, their tops at an elevation of 22 feet. In August the rafters had been removed, the bottom of the hole was cleared, and the west wall of 55 had been torn down and was being rebuilt in adobe. Where 63 had been, stones had been piled for building a new room or wall. Most of the rear or west wall of 181 is broken down, although the room is still inhabited. 143 is rebuilt and inhabited. It extends to the south wall of 141, and its roof is level with that of 141. 158 in July was a roofless ruin. In August it had been broken down, but the southern part of previously ruined 157 was being rebuilt. The southern half of 376 was completely removed in July. By August, the northern half had been restored, and was inhabited by the new occupants of 373 and 374. The roof of 256 was being torn down, in order to be rebuilt. The fronts of 391, 397, and 398 have been brought out into a continuous line with that of 406. Sha'lako had been held in two of these houses during the winter. I have no doubt that exact examination would reveal at least a dozen other alterations of the same kind, besides new building in the environs.

There is a special factor of importance making for alteration. This is the custom of improving and, if possible, rebuilding one's house after one has been designated one of the hosts of a Sha'lako god in the great December ritual. People apparently vie with each other to make their houses as imposing as possible on this occasion, and the result is that every year the front or main living rooms of eight¹ different houses are with few exceptions pulled down to be rebuilt on an enlarged scale. The degree to which this custom leads to alterations has possibly been intensified in recent years. Under present conditions, the feeling is of sufficient strength to bring about that the exterior walls of nearly every house in Zuñi are altered in the course of thirty or forty years.

¹ There are six Sha'lako gods, but eight houses are rebuilt. Stevenson, p. 227.

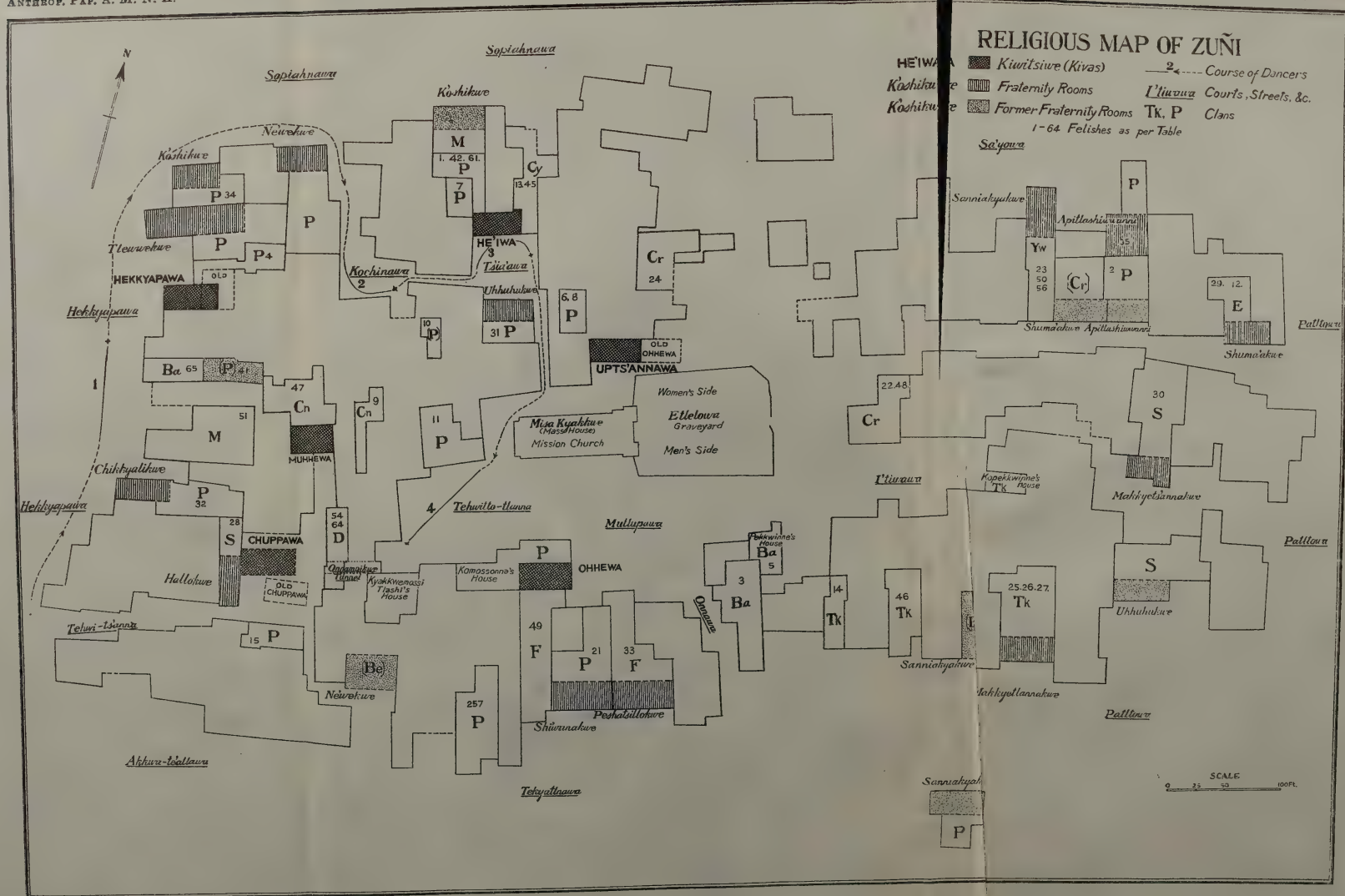
CHANGES IN RELIGIOUS STRUCTURES.

Even religious structures are not exempt. Of the six kiwwitsiwe or kivas, three are no longer standing where they stood in 1881. Ohhewa is shown adjacent to the east end of Upts'annawa in Mindeleff's map. It was subsequently rebuilt south of the church and main plaza on ground that had formed part of the house of the Komossoonna or dance director. Hekkyapawa was recently re-erected in part on the old site, but made to project farther west. As a result, its main axis is now from east to west like that of the other kiwwitsiwe, instead of forming an exception in extending from north to south. Chuppawa was non-existent as a building on my arrival in Zuñi in June, 1915. It had stood at the corner of the alley separating the main block from the southwestern one, leaving a narrow passage way; a turn had to be made to reach the west end of the one remaining tunnel in Zuñi which marks the junction of the main and the southern blocks. As all the houses adjacent to old Chuppawa had been torn down, it was decided to move the ceremonial chamber and place it farther north, leaving a wider and more convenient thoroughfare. No doubt this change also gave opportunity for a larger building. At the time of my arrival and for some weeks thereafter, one of the women from the neighboring houses had a bread-baking oven on the spot selected for the new kiwwitsinne. In July, the ground was cleared, the foundations outlined, and work began. By August 8, the walls had risen nearly to their full height. In 1916 the chamber was in use. Muhhewa kiwwitsinne is said not to have altered for many years. He'iwa has been rebuilt and slightly enlarged, but remains on the same spot as in Mindeleff's day. Upts'annawa appears to have been somewhat enlarged when adjacent Ohewwa was removed. These changes in the kiwwitsiwe are shown in Map 8, which records features of religious moment in Zuñi life.

This same map reveals a like readiness of the Zuñi to shift their fraternity headquarters when there is occasion. Mrs. Stevenson says that according to Zuñi theory each of these religious bodies has met in the same house since the time of its foundation. I have no doubt that the Zuñi make such statements, but they are certainly schematic expressions to which the people are aware that their practice furnishes exceptions. Seven of the thirteen fraternities have been moved to other houses in recent years.

The Sanniakyakwe first moved from the destroyed Eagle house 407 on the south side of the southeast block to a free Pikchikwe house directly south. The man of this house was out of 407. Recently they moved again, to Yellow Wood house 347 on the north face of the northeast block.

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The Uhhuhukwe were not far away from the Sanniakyakwe, in Sun house 446. Not long ago they transferred their headquarters to the Pikchikwe house 54 on Ts'i'a'wa, the so-called Sacred Plaza. This is the only case of a move between the eastern and western halves of the town.

The K'oshikwe have moved from Tansy Mustard house 159 to Pikchikwe number 1. These are on the northern fronts of the north and main blocks respectively.

The Ne'wekwe transferred their seat from Bear house 235, now ruined, on the south side of the south block, to Pikchikwe house 7 at the northeast corner of the main block.

The Apitlashiwanni or bow priests formerly met in Pikchikwe house 360. This stands but is uninhabited. They now have their headquarters in the adjacent Pikchikwe house 357, which faces north instead of south in the same block.

The Shi'wanakwe, once in Pikchikwe house 96 in the main block, are now in Pikchikwe 268 on the south front of the south block.

The Shuma'kwe formerly adjoined the Apitlashiwanni in Crane house 354. Their head was a young man of this house. Some years ago there was sickness in the pueblo; this youth was accused of witchcraft, and intimidated into a confession. Sentiment ran high against him; and while the Zuñi no longer hang their convicted or confessed witches, owing to examples made by the federal government, the young man stood in serious danger of losing his life privately, or at least of severe maltreatment. The agent intervened diplomatically by putting him to work at the Black Rock school, until excitement had somewhat subsided; and he is now again a member of the community, although more or less shunned by all except his blood kin, who believe him innocent. He was promptly deposed by the Shuma'kwe, who abandoned even his house, moving four doors to the east into Eagle house 372. The same sort of thing obviously could have happened in ancient times, and probably did, now and then.

It is clear that the Zuñi reveal the same impulse in moving their fraternity headquarters as their residences: they tend to preserve the location in the original quarter of the town.

The status of the fraternity houses appears to have no exact parallel among the Hopi. There, each kiva belongs to a society or fraternity. At Zuñi, the six kiwuitsiwe are the nearest correspondents of the Hopi kivas. It is even not impossible that the words are at bottom the same. The Zuñi kiwuitsiwe however have no connection whatever with fraternities or fraternity rituals. They belong, as the Zuñi say, to the Kokko or gods, that is, the masked impersonators of gods. In other words, their membership is the membership of the tribal organization which performs the rites that the Hopi know as kachina, in distinction from the unmasked festivals of the societies. It must be pointed out again that the difference between these two branches of religion is not only fundamental at Zuñi, in our interpretation, but is quite clear in the native mind. Whether it is an equally basic distinction at Hopi remains to be ascertained. Dr. Fewkes has expressed it, but it does not appear from his presentation that the Hopi are conscious of quite so radical a diversity between their tribal organiza-

tion and the society organization as are the Zuñi. Their association of their kivas with the fraternities, though it may be a survival of an older condition which once obtained at Zuñi, also points in the same direction of a less definite separation of the two currents of cult.

At any rate, the headquarters of the fraternities at Zuñi in recent years, and probably in recent generations, have been the front rooms of ordinary living houses, the room, in each case, in which the permanent inmates of that house eat, sleep, and pass most of their time. It is rather remarkable that esoteric bodies should have selected front rooms for their meetings rather than the really secluded interior ones. The fact appears to evidence that the Zuñi fraternities are not as secret in their essential nature as it is usual for us to assume. Anyone walking by could certainly hear all the songs and, on occasion, see much of what was being done inside. In addition, as Mrs. Stevenson observes, the inmates of the room, far from vacating the same when a ceremony is to be performed, do not even remove their beds from it, although they pretend to sleep.

The fraternity headquarters, then, are all on streets, and mostly on the outer edge of the pueblo. It is rather remarkable that none of them are on courts or plazas, the one exception, that of the Uhuhukwe, constituting the most recent removal of all. The six kiwuitsiwe, on the other hand, are all on courts, if the blind alley on which Chuppawa and Muhhewa are located be counted, as seems proper, a court. Hekkyapawa, it is true, is on the western edge of the pueblo, but faces the level space known by the same name and reckoned by the Zuñi as a court, as is shown by the fact that this space is one of the four regular stations in which the masked dancers perform. The description of the kiwuitsiwe as being situated in secluded parts of the pueblo, accordingly does not strike me as accurate.

GROWTH OF THE TOWN.

It is of interest that in spite of the strong inclination of the Zuñi of today to leave the old pueblo, they appear to remain attached to it by invisible bonds. It has already been stated that, as expressed in Map 5, when a family makes this move, it appears normally to settle in that part of the suburbs corresponding to the section of the town in which its old home was located. There appears thus to be a marked sense of orientation that survives considerable innovations. Of the same sort is the overwhelming tendency of the people in the outside houses to have their doors face towards the town. Nearly every house north of the pueblo has its door to the south; nearly all on the south side of the river face north, and

the exceptions are almost always to be found in houses that lie some distance to the east or west of the north and south axis of the town and therefore have their doors facing respectively west or east.

Adobe seems to be little used, even for new construction, within the old town limits; but it is rather frequent in the outside houses, though still perhaps employed in only a minority of instances. Not infrequently the first room or two of a house in the suburbs will be built of stone and subsequent additions made of adobe; or vice versa.

It is also obvious that the outside houses on the whole are very much larger than those within the pueblo. As already stated, the Zuñi of today appear to be proud to live in a spacious structure. They receive compliments on this score with gratification. Often the newer houses, and particularly the living rooms, give the impression of being far larger than there is any need for. Of course, this building of great houses in the suburbs is only an intensification of a tendency which is finding expression within the pueblo so far as space and conditions permit. There are almost no small rooms of the old-fashioned type to be found facing any open place. It is necessary to penetrate to the interior of blocks before rooms of this kind are encountered. Even there the tendency appears to be gradually to unite two or three of the small old rooms into a single rebuilt larger one. This tendency toward enlarging is already clearly discernible on Mindeleff's map.

The criterion of age which is thus furnished corroborates the impression which appears to have been gained by everyone familiar with Zuñi, that the three eastern blocks of the town proper are newer than the four western ones. There is not only in general a greater regularity of inner and outer lines, but a much greater average size of rooms. The southern block, and perhaps the eastern half of the northern block, also convey the impression of being not quite so old as the heart of the main or northwestern block. It is in this main block, in the western half of the north block, and possibly in the small southwestern block, that the original lines of the pueblo must be sought. This reconstruction does not imply that the population of Zuñi two centuries ago was necessarily less than at present. With allowance made for the much smaller size of room customary then, as well as for a possible difference in the number of rooms customary in one house, the area indicated, which is less than half of the present pueblo proper, would perhaps have sufficed to hold as many people.

It is also likely that the impulse towards larger houses is a fairly old one and may have begun to be operative soon after the town was founded.

The church and graveyard were clearly not placed in the middle of an established or to be established town, but the town has literally grown

around them. The church, or its possible predecessor, probably stood from the first where it is now. At that time it would have been outside the pueblo and off to the east of it. Gradually the town grew eastward where the ground is nearly level, whereas to the north and west it slopes sharply a short distance from the pueblo wall line. After a time, the church and cemetery were enclosed on three sides. The town, however, continued to grow until the three eastern blocks had been added. It is impossible to say whether this process was continuous, or, whether after the present pueblo limits had been reached, there was a cessation, along the lines indicated in Mindeleff's map, until the recent drift to the suburbs began.

The location of nearly half of the fraternity houses in the three eastern blocks indicates that these blocks possess at least a respectable antiquity. But on the other hand it is no evidence of their great age, even within the two and a quarter centuries that modern Zuñi has stood, on account of the demonstrated readiness of the people to move these headquarters. That the kivas are all in the western half of the town, and, until some years ago, all in the northwestern quarter, that is, in the main and north blocks, is however probably significant, because these structures are avowedly and wholly religious.

THE ORIGINAL TOWN.

Several excavations within the old town lines or close to them were made in 1916 by Mr. Leslie Spier for the American Museum of Natural History. These are shown on Map 6 by the letters K to V, and KK to NN. Mr. Spier states that the pottery found at different levels in these holes grades by a series of continuous transitions from the ware in use today down to a style which is identical with that found in the uppermost deposits of towns like Mattsakya that we know from historical sources to have been abandoned during the Pueblo rebellion of 1680.

The Zuñi, who do not deal in dates, tell that their ancestors did not live in the present town but at Hallonawa directly across the river, where the trading stores now stand. Halonagu is mentioned by Oñate in 1598 as one of the six inhabited Zuñi towns. In the revolt of 1680, the mission of La Purificación de la Virgen de Alona was destroyed. Hallonawa is therefore well attested as a pre-rebellion town. Moreover, the site of Hallonawa, south of the river, was unquestionably once inhabited. Cushing built the northernmost of the structures now occupied as trading stores, and in digging its foundations uncovered walls, skeletons, and artifacts, on which Fewkes has reported.¹

These facts have led to the general assumption that the shift from Hallo-

¹ Journ. of Am. Arch. and Ethn., I, 103-105, 1891.

nawa to Zuñi proper occurred in connection with the pacification and concentration of the tribe into a single town at the end of the rebellion in 1693. But this conclusion is certainly erroneous. Mr. Spier's excavations at Hallonawa prove that the pottery of this site is of a type different from the ware that was in use at Mattsakya for some generations before 1680. The Hallonawa pottery is older, and probably older by a considerable interval. The Hallonawa on the south bank of Zuñi River had been long abandoned when the Pueblo rebellion broke. It is likely to have been a ruin when Coronado came.

Since however historical records leave no possible doubt that there was an inhabited pueblo known as Hallonawa not only in 1680 but for a century or more before, it follows that if this was not at what we and the modern Zuñi call Hallonawa, it must have stood either where Zuñi is today or at some spot in the vicinity. The latter possibility must be admitted, but is entirely unsupported by evidence. The probability therefore is that the historical Hallonawa of the sixteenth and seventeenth centuries was Zuñi. The lowest sherds found by Mr. Spier in Zuñi accordingly represent not the period beginning with 1693, but a period antedating 1680 by perhaps two centuries — almost certainly by one.

Cushing evidently had some information of this pre-rebellion Hallonawa-Zuñi — whether from native tradition or historical sources is not clear. Mindeff,¹ on his authority, makes the pre-1680 Hallonawa extend from the trading stores across the river to what is now the western portion of Zuñi. He even professes to find some vestiges of this older town — or rather half town — in a few discernible wall fragments remaining in modern Zuñi. Nothing of the kind is visible today, in my judgment. In fact, the constant rebuilding which I have cited makes it extremely improbable that even any pieces of walls would survive for two centuries or more between the pre-1680 period and Mindeff's survey, excepting such as had been buried feet under ground. Mindeff seems to have been led to his finding through a rather unauthentic idea that the age of walls could be identified by the type of their masonry.

Cushing, then, was probably right in making Zuñis live on the site of modern Zuñi before the rebellion; he was wrong, if Mr. Spier's objective discoveries are worth anything, in considering this residence synchronous with the occupation of the Hallonawa south of the river. This conclusion clears up a difficulty: namely, why a comparatively small town should have been built on both sides of a river that at times cannot be crossed — a condition that would be quite without precedent in the Pueblo region. The conclusion also disposes of another troublesome point in the views heretofore

¹ Bur. Am. Ethn., Ann. Rep. VIII, 88, 1891.

held. Hallonawa is practically a flat site, only slightly elevated above the river. Less than two hundred yards away is the natural knoll which served as a nucleus for Zuñi. The Zuñi towns from the time of Coronado to the rebellion were all on knolls, hills, or rising talus slopes. A Zuñi settlement on the level ground during this part of the Spanish period would be an anomaly. A settlement there centuries earlier, when pottery was perceptibly different, and habits of life perhaps equally so, offers a much slighter obstacle to our understanding.

One question remains: why the Zuñi, living on what from at least 1598 to 1680 seems to have been called Hallonawa, now denominate this site Shiwwanakwe (Zuñi place), or I'tiwawa (middle place), and apply the term Hallonawa (ant place) specifically to the site south of the river. But this problem is largely formal. As a matter of fact the Zuñi still call their town Hallonawa. They use all three names for it. When situation or context forbid confusion, they call Zuñi Hallonawa about as frequently as they call it Shiwwinakwe or I'tiwawa. If on the other hand one Zuñi passes another on the streets of the town, extends the habitual greeting "Where are you going?" and receives the answer "To Hallonawa," it is understood that the responder is on his way to the prehistoric site across the river, and generally assumed that he intends to deal with one of the American traders there. It is much as, in Brooklyn, "New York" means Manhattan Island, but in Chicago or a census report, the whole of the city including Brooklyn. Shiwwinakwe and I'tiwawa are in fact descriptive and religious designations, and the proper name of Zuñi as a locality is still Hallonawa.

The depths below the present surface to which potsherds, débris, and accumulations connected with human occupation are found at the several spots excavated in Zuñi, are as follows:—

W	unexcavated
V	5.5 feet
U	5
T	a tilled field, natural surface, unexcavated
S	7
Q	8.5
P	7.5
O	washed sand, no refuse
N	3.5
M	2.5
L	12.5
K	15.5
Room 62a	22 feet below 1915 roof level
KK	4
LL	11
MM	12
NN	9.5

From these figures it will be seen that while from two to four centuries of occupation have appreciably raised the surface of Zuñi, the opinion that the original site was nearly level, is untenable. Yet the original knoll was small, and the accumulation of wash and refuse has been heavy, averaging perhaps a quarter to half an inch a year, and reaching very likely twice that amount in spots.

Mr. Spier has kindly plotted for me the probable contours of the Zuñi hill as it appeared when first settled. These are indicated in Map 6 by black broken lines.

A reliable old Zuñi went about Hallonawa with me and pointed out the sites of the kivas and courts in the ancient village. His information promised to be valuable archaeologically, until I realized that he was placing each structure and plaza in the same relative position as it now occupies in Zuñi. Map 9 reveals the result. The heart of present Zuñi is simply projected on the ground of Hallonawa. Even Ohhewa Kiwitsinne is correctly given; since in Mindeleff's time, and I do not know for how much earlier, this adjoined Upts'annawa. The native idea clearly is that Hallonawa was old Zuñi and was like it; and that when it was abandoned, the inhabitants packed up and rebuilt their city on the identical plan across the river, the town being moved bodily, as it were.

I have talked casually with many Zuñi about ruins and excavation, and the above seems typical of their point of view. Remains that are post-Spanish and others that are obviously very ancient are thrown together into one blurred past, the *innote* or "long ago," which seems to begin very nearly where the experience of living individuals ends. I have never heard from a Zuñi the least reference to a historic event. They may possess a stream of semi-historical tradition, distinct from their mythology and schematized conceptualizing of the past; but if so, it drains but a minute fraction of their minds. I have waited two summers for a spontaneous manifestation of something of the kind. Direct inquiry probably would reveal certain traditions; but they would not be the kind that the natives habitually tell each other. The Zuñi are intensely interested in the scheme of structure of their society, and in its divine institution; but their invariable assumption is that since its institution this society has remained a constant unit, unchanged except for little irregularities that come with the wear of time. Such minor variability they seem to regard as obvious, trivial, and not particularly worthy of attention; and such are the conquest of Coronado, the establishment of a mission in the heart of their town, and other actions of the Spaniard with reference to themselves. As a matter of fact, any change imposed on the social scheme is very quickly absorbed into it; a generation or two suffices, the alteration has become fixed, and is reckoned as perpetual as the structure, though perhaps obviously incongruous.

An example. The Zuñi are professedly anti-Catholic and anti-Christian. During the summer of 1916, the proposed establishment of a Catholic mission incurred the displeasure of the whole tribe except a small minority of individuals standing in special relations to Mexicans. In the meeting at which the affair was brought up, the sentiment of the overwhelming majority was so vehement that the negative decision was unanimous; and the result was received not only with general satisfaction but open rejoicings. Yet every Zuñi that has died within the past two centuries lies buried in the unkempt little graveyard that was first consecrated by Catholic fathers, and in the center of which a constantly renewed cross rears its beam. The mission church in the heart of the town is to us the ever impressive reminder of the Christian influence imposed on the nation for many long generations; to the Zuñi it is anything but a symbol of the alien religion which they struggle to ward from themselves. They make attempts, mostly ineffectual, it is true, to roof and preserve the crumbling structure of adobe. Some years ago, a wider passage was wanted between its altar end and the nearby houses. The western wall was therefore torn down. But it was re-erected in its entirety, a few feet farther in! The northern face gives evidence of having been similarly shifted. This by a people that resent the coming of the priests, that will not tolerate a Catholic Mexican within view of their religious observances, and from among whom only playing boys, hens, and hogs trouble to enter the edifice which they toil to preserve. We face here a strange conservatism indeed: but it is a conservatism of the present, with no feeling for the past. The church, the graveyard, the cross are not Catholic; they are Zuñi; therefore they are clung to and treated as things integrally and inherently Zuñi.

The habitual attitude of the Zuñi, then, is unhistorical. He derives satisfaction from recognizing his national system, and from thinking of it as fixed since its first establishment. In everything else his interest is but intermittent and perfunctory. That now and then he may preserve fragments of a knowledge of the past that approximate what we consider history, is not to be doubted. But it is equally certain that such recollection is casual and contrary to the usual temper of his mind. From these conditions we must conclude that the shape of these recollections, and even the very selection of their content, is likely to be randomly fortuitous in our sight, whenever it is not wholly determined by the Zuñi's prevailing and sufficient systematization of his narrowly encompassed world.

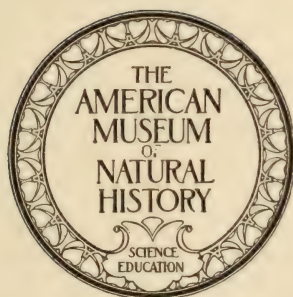
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AN OUTLINE FOR A CHRONOLOGY OF ZUÑI RUINS.

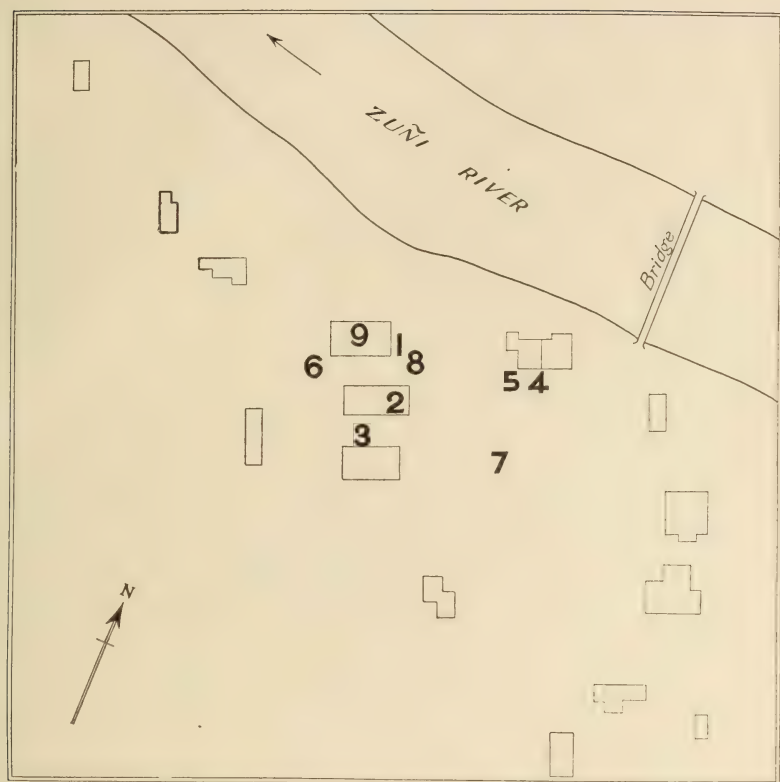
BY

LESLIE SPIER.



NEW YORK
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1917



TRADITIONAL HALLONAWA.

Kivas

- 1 He'iwa
- 2 Muhhewa
- 3 Chuppawa
- 4 Ohhewa
- 5 Upts'annawa

Plazas

- 6 Hekkyapawa
- 7 Tehwitto-tlanna
- 8 Ts'i'a'awa
- 9 K'ochinawa

AN OUTLINE FOR A CHRONOLOGY OF ZUÑI RUINS.

BY LESLIE SPIER.

PREFACE.

This study is the result of collections made during the summer of 1916. Three weeks were spent in assisting Mr. Nels C. Nelson in a survey of the ruins in the neighborhood of Ramah, New Mexico: during the remainder of the time the survey was continued by the writer alone, principally on the Zuñi Indian Reservation further west. Realizing that the entire region surveyed should be described as a unit, Mr. Nelson has generously placed his notes and collections at the writer's disposal. Our thanks are also due the many willing collaborators, white and native, who expedited the work; in particular to Mrs. E. G. Nelson, William F. Lewis, governor of Zuñi, and Mrs. Lewis. To Professor Alfred L. Kroeber we owe the interest and assistance of the Zuñi themselves, without which little could have been accomplished.

The purpose of the study was to provide a background for ethnological investigations among the Zuñi. In his work of the previous year, Professor Kroeber clearly indicated the possibility of chronologizing the ruins of the Zuñi country. A more extended view of the field showed, however, that for the present the time-relations among the ruins could be given only in general outlines. We found almost invariably that the shallow refuse heaps yielded little or no stratigraphic information and we were therefore thrown back on the hazardous methods of hypothetical seriation. Further, when all the data were assembled it was found that our survey had not covered sufficient territory to complete the chronological outline; that is, it is still necessary to extend the field down the Little Colorado Valley. Nevertheless, we have attempted to give the results a definite form by providing a statistical setting, though it is not claimed that such results are more than indications of what a more extended investigation may discover.

LESLIE SPIER.

July, 1917.

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THE ZUÑI REGION.

The area in which the ruins described in the following report lie is situated close to the Arizona line in central western New Mexico. It embraces the territory drained by the Zuñi River and lesser tributaries of the Little Colorado River; a fan-shaped sector extending from the great lava bed on the line of the continental divide to the confluence of the Zuñi with the Little Colorado. The modern political divisions included are the Zuñi Indian Reservation, portions of the Zuñi National Forest, and adjacent settled

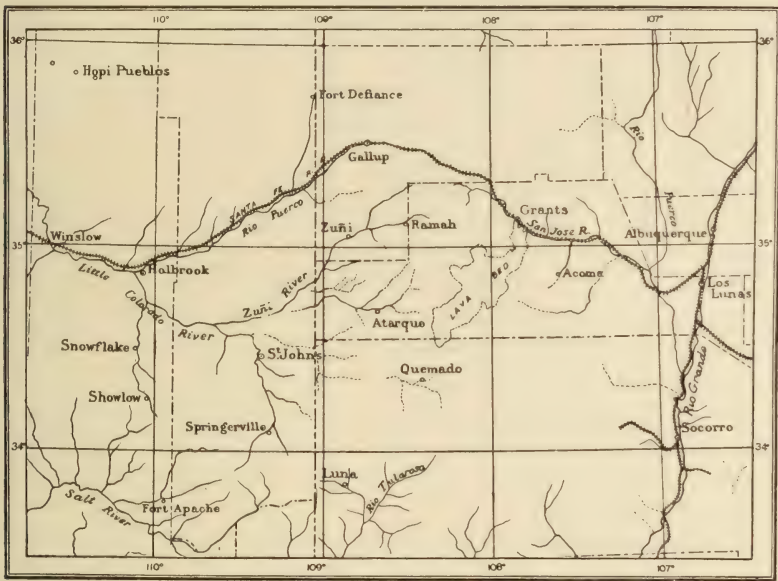


Fig. 1. Map of the Headwaters of the Little Colorado River.

lands, all within McKinley and Valencia counties, New Mexico. This area, which we shall designate as the Zuñi region, measures roughly sixty miles east and west by forty from north to south.

Topographically the area includes the western extension of the plateau which forms the continental divide midway between the Rio Grande and the Arizona line. Erosion by streams tributary to the Little Colorado, viz., the Rio Puerco along the line of the railroad to the north, the Zuñi River traversing the center, and minor nameless streams as far as Atarque on the south, has produced certain marked modifications. The remnants of the plateau

left by the marauding streams stand as the dominant land masses. Across the northeast corner of the area extend the Zuñi Mountains from northwest to southeast. They merge on the northwest into the low, rolling, but broken, country between the Puerco and the Zuñi south of Gallup, rise to nine thousand feet and attain mountainous proportions in their middle section, and merge again in the plateau south of Grants and Acoma. Thence, the plateau sweeps from the great lava bed on the east through the southern half of our area.

Along the southwestern foot of the Zuñi Range extends a broad shallow valley draining westward into the Zuñi River. Emerging from the plateau to the east it descends toward the west until in the vicinity of Ramah (see map,¹ Fig. 2) it reaches an altitude of seven thousand feet. On the north it is hemmed in by the steep declivity of the Zuñi Range, but on the south it lies as an open and barren plain clear to the Datil Range far distant to the south. But a valley-like character is given by a series of mesas extending northwest from Inscription Rock parallel to the Zuñi Range and merging into the Nutria monocline.

At its western end, near Ramah, the drainage from this valley empties into the head of the Zuñi River valley proper, which stretches as a crescentic depression toward the southwest through the center of our area. For the first fifteen miles of its westerly course, the valley descends between canyon walls, one to two miles distant from each other, increasing in height from three hundred feet in the vicinity of the Pescado village to six hundred above the agency, Black Rock. Opening into it from either side are numerous small and narrow canyons cut from the original plateau quite to the present level of the valley floor. Just above Black Rock the main valley is joined by the lesser valley of Nutria Creek leading from a saucer-like depression on the north.

At Black Rock the valley opens out into the Zuñi Basin and here the river drops one hundred feet through a basaltic cliff to the level of the broad plain now exposed. In the center of the plain lies Zuñi Pueblo; low mesas mark its northern margin, and its southern boundary is the sheer, high edge of the plateau. From the northern mesas rise four remnants of the plateau to their original level, the twin Zuñi Buttes and two larger eminences near Zuñi, Kwillyallanna. Dominating the basin from its

¹ The map does not present topographic features with uniform correctness. It is based on the excellent "Map of Zuñi Indian Reservation, New Mexico" (Department of the Interior, Office of Indian Affairs, 1914) and on the topographic map of the U. S. Geological Survey, Wingate Sheet, for the area north of the thirty-fifth parallel. For the area to the south, we have been forced to rely on imperfect sketches and memory. We have, therefore, refrained from showing topography in the southern area, but this does not matter, as the relief there, except in the vicinity of Atarque, is relatively slight.

southern border rises Towwayallanna (the so-called Thunder Mountain) for a thousand feet sheer. Toward the southwest the basin broadens out along the river, now at an altitude of six thousand feet. Its northern margin merges into the low rolling country extending to the Puerco fifty miles distant. From Towwayallanna the edge of the plateau extends due south for ten miles and then swings westward for a somewhat greater distance into Arizona, but the edge is not clearly defined, for badly broken remnants of the plateau fill the region lying between river and plateau edge. Penetrating through these remnants from plateau to river is a minor valley on the edge of which lies the village of Ojo Caliente. A few miles below, the river strikes the impassable plateau, turns abruptly westward into Arizona, and flowing in a general southwesterly direction through the rolling hills joins the Little Colorado River forty miles away.

The remainder of our area lies on the Zuñi plateau. Its northern and western edges are defined by the Zuñi River valley, whence it sweeps south and southeast an indeterminate distance. Nor is it broken by any great valleys, although crossed by two extensive drainage systems. The first of these drains the region southeast of Ojo Caliente, traversing the plateau from east to west to join the Zuñi River not far over the Arizona boundary. The second is much more extensive, embracing all the territory southward of Inscription Rock and Ramah and thence westward south of the first system into Arizona, where the channel is lost in the rolling hills before ever reaching the Zuñi. We have purposely referred to these drainage channels as systems, for as such they exist for the greater part of the year, the typical shallow dry channels of a plateau country. But the plateau is not an unrelieved plain. Along its eastern border extends the great lava bed, a sheet of desolate country separating the Zuñi region from that of Acoma, with outlying tracts of "malpais" within the limits of our area. Westward of this are salt ponds and sinks. The drainage channels themselves form shallow canyons, while at times the plateau rises to an altitude of nine thousand feet, to judge by the flora.

The forestation of the region follows the main topographic features. The Zuñi Mountains and a large part of the Zuñi Plateau are densely pine-clad; lofty pines rising form a variety of scrub growth, including in favorable localities clumps of small oaks. Small springs, little more than seepage places, occur at not infrequent intervals in such forests, and the park-like groves around them make the most delightful camping places imaginable. Such springs occur, of course, at the heads of canyons leading into the drainage channels on the plateau, and by their location was determined that of the habitations in this section. The general level of the plateau, and this includes the majority of the mesa tops, say about seven thousand

to seven thousand five hundred feet altitude, is clothed with low cedar and piñon trees, bayonet cactus (*yucca*), but not much underbrush. There is but one living stream on this level in the whole area known to us, that at the foot of YallaLanna, northwest of Zuñi. Yet there are many ruins, large and small, at this level, from those perched on Inscription Rock in the east, to the group on Towwayallanna near Zuñi, and the ruin of Ketteippawa, near Ojo Caliente, to the south. In all such places there are depressions, natural or partly artificial, for the collection and storage of surface drainage. It is noteworthy that most ruins atop isolated mesas have springs or ponds accessible to them in the valley below. Near ruins located in canyons and shallow valleys scooped out of the plateau there can still be traced crescentic dams thrown up to catch the run-off. In many instances these have been rebuilt by present-day inhabitants.

The whole floor of the Zuñi River valley, including the broad basin at the foot of the Zuñi Range, is devoid of forest. Its covering is grama grass and sagebrush. This, as the terminous of all the drainage from the surrounding terrain, is naturally the best watered section of the whole region. Yet the chief localities where water may be found in the early summer, before the rains set in, can be briefly enumerated. Beginning at the east, there are springs near Tinaja and a permanent waterhole in the ruin of Cienega (percolating from under the lava sheet). The basin here presents an inhospitable appearance, but water is not far from any of the ruins even at this season. A fair-sized stream has its source in the foot of the Zuñi Range and runs westward past Pueblo de los Muertos to Ramah which is situated at the junction of several drainages capable of cultivation. Further north, Nutria Creek also rises in the mountains as a permanent stream. It is of considerable size and in the neighborhood of Nutria village irrigates an area fully two miles long. At Pescado village six miles west of Ramah are two groups of large copious springs which, gushing from under the lava fault at this point, constitute the perennial source of the Zuñi River. Water is now diverted from the springs into irrigation ditches, as it undoubtedly was in prehistoric times. Many ruins are clustered in the vicinity, duplicating the situation at Ramah. Above the Zuñi Basin the government reservoir at Black Rock now permits the cultivation of an extensive area in the vicinity of Zuñi, but it obscures aboriginal conditions at this point. Irrigation may have been practised here, but of this we are not certain. However, many large tracts in the sandy washes outside of the government project are under cultivation by dry farming and undoubtedly represent the original methods.¹ Whipple says of conditions in 1853 that "The soil

¹ Cf. Möllhausen, 98; Sitgreaves, 5, 6, footnote, and 35.

seemed light, but where cultivated, it produces fine crops without the aid of irrigation. Not an acequia was seen; and an Indian, who accompanied us, said they were not resorted to, as sufficient moisture for the fields was derived from rain."¹ The large wash leading towards Zuñi from the north, and others near the foot of Towwayallanna to the south may be pointed out as typical areas cultivated by dry farming. Even sand bars in the bed of the river are utilized. Other washes occurring at intervals further down the basin are now cultivated. The Zuñi River ceases to be a source of water supply in the lower basin; for it sinks into the ground a few miles below Zuñi and only a few pools stand in the lower reaches of its bed. At Ojo Caliente the so-called hot springs² burst forth from under the edge of the lava sheet in great quantity and permit the irrigation of a large area. Here, as at other springs, grows the ubiquitous cottonwood. Portions of the washes in the valley above the springs also sustain cultivation.

This brief glance at the characteristics of the Zuñi region must have made it clear that this is no desolate waste. In fact, the foregoing description presents the minimum conditions governing the occupation of the region. We have described the country at the driest period in the year, the early summer, after the protracted windstorms have dried up everything and before the rains of that long period from the beginning of July to the middle of September have set in. Nevertheless, a copious water supply is obtainable in only four places, namely Ojo Caliente, Pescado, the Ramah district, and Nutria, and naturally about these, excepting the last, are clustered a great number of ruins. In spite of the fact that the attractions of these localities outweigh all others, all of them have not been continuously inhabited while the region was occupied. There are no certain signs of a general desiccation of this region, the presence of ruins close to the continental divide notwithstanding. For on the one hand, ranches of Zuñi, Navajo, and white settlers are today scattered widely over the same area, and on the other, its potential water resources remain unknown to us.

Climatic conditions are favorable on the whole. In the valley the winters are not regarded as particularly severe, and the summers are pleasantly cool. Most noteworthy are the windstorms of spring and early summer for their obvious influence on the location of habitations. The prevailing winds are from the northwest and west, that is, they sweep through the upper valley. Consequently, the house cluster was often built on the eastern side of a ridge in its lee, or against the western slope of a cross-canyon. This location of the buildings had an additional advantage gained

¹ Whipple, I, 67.

² They were never hot during the time we were excavating in the neighborhood.

from the architectural style — they had their backs (the high side of the building) to the wind. A secondary effect of the strong winds was on the location of the refuse heaps, which are almost invariably to the southeast of the main building, although often to the east and south. Note, for example, the location of the old refuse in Zuñi Pueblo itself. Presumably, the refuse was carried thither so that it might not blow back into the pueblo. The invariable nature of this phenomenon was no mean assistance in archaeological work.

LOCATION OF RUINS.

There are probably more than two hundred ruins in the Zuñi region, fully half of which lie on the present Zuñi Reservation in or close to the main valley. Fifty or more lie east of the Zuñi Reservation, chiefly in the neighborhood of Ramah and in the broad valley at the foot of the Zuñi Range. An indefinite number are situated on the Zuñi Plateau to the south-east, the chief of which were visited; the remainder are, from all accounts, probably only widely scattered small houses. We believe that the following record presents a very fair representation of the ruins in this region; certainly none of the more important sites have been omitted. A few sites of uncertain character and a number of sites where potsherds were plentiful, but not masonry, have been included.

The ruins are numbered in order from the Arizona-New Mexico boundary line northeastward up the Zuñi River valley to its head east of Inscription Rock, thence south and southwestward across the Zuñi Plateau. The location of the ruins is indicated on the accompanying map (Fig. 2).

Site 1. A single small house, now almost obliterated, stood on the north side of Barth's ranch house near the Zuñi River, which crosses the boundary line into Arizona not over a half mile east of this place. A random collection of sherds was made from the surface of this ruin. There are reported to be similar ruins on the low hills here, but the press of time would not permit a visit to them. Mr. Nelson found a small ruin about three miles west of the Arizona line and north of the river.

Site 2. Two and one quarter miles from Barth's house on the direct road to Ojo Caliente, i. e., east of the river, is a site strewn with sherds, but no building stone is to be seen. A random surface collection was made.

A ruin, *A'tella Luptsinna*, is said to lie somewhere to the east, about four miles or more south of Ojo Caliente.

Site 3. Half a mile south of Ojo Caliente a low ridge runs eastward across the valley to the Zuñi River. Midway on this ridge, i. e., about two miles west of Ojo Caliente, lies a small ruin, its building stone now much scattered. A random surface collection was made.

*Site 4—Heccotayalla.*¹ This is a large ruin situated at the western extremity of the above-mentioned ridge and about one half mile east of the river. This ruin approximates a rectangle 200 by 250 feet (Fig. 3b). The

¹ ruin + mountain.

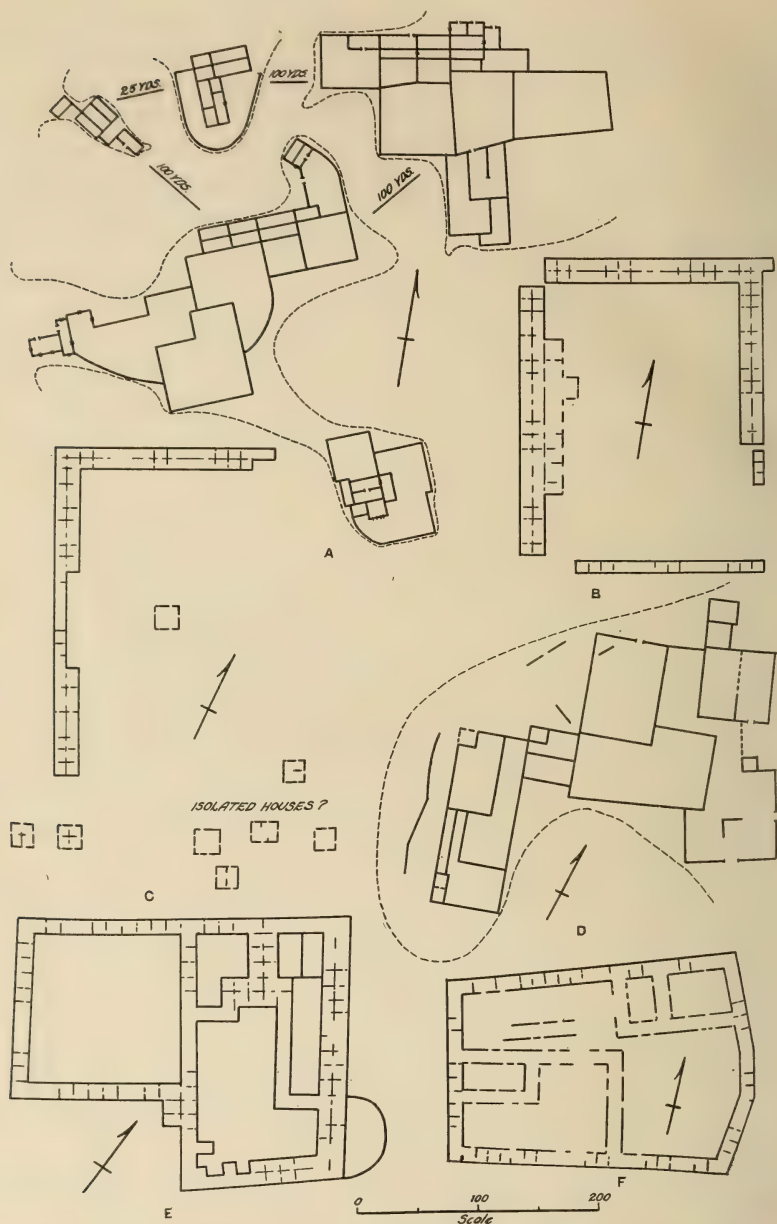


Fig. 3. Plans of Ruins: Ojo Caliente and Zuñi Districts. a, Ruin 42; b, Ruin 4; c, Ruin 11; d, Ruin 53; e, Ruin 71; f, Ruin 61.

ruin is in a tumble-down condition so that only a rough approximation could be made of the number of rooms in the width of the pueblo buildings. Strangely enough, trial trenches sunk into the ground where sherds showed thickly on the surface failed to reveal any ash heap, although ashes are widely scattered on the surface. A random surface collection was made.

Site 5. A small site with little building stone showing lies three quarters of a mile northwest of Site 4 and two hundred feet west of the river. A random surface collection was obtained.

Site 6. This small site, into which the river has cut, lies half a mile north of Site 5. Shifting sand has covered most of the tumble-down walls. A random collection was made.

Site 7. From Ojo Caliente a road runs northwest past Hawwikku to the river. Immediately opposite this point the low hills west of the river approach it closely. Here are two sites, at the foot of the slope; the western one small, with scattered small building stones. To judge by the sherds collected from the surface this is a "slab-house" site. There is a similar site one hundred and fifty feet south of this, and others may lie in the vicinity.

*Site 8. Tca' lowa.*¹ The other ruin lies a quarter mile northeast close to the river, a mile and a half distant from Hawwikku. The ruin is roughly circular, about 70 yards across with a central depression 40 yards in diameter, tumbled walls showing in all save the southern segment and heaped highest on the northern side. Sherds are abundant on the southwestern and southeastern slopes of the low knoll on which the ruin lies. Trial trenches were dug in both slopes: in the first two thin ash layers were revealed at 1 foot 6 inches and 1 foot 9 inches below the surface, and in the other a thicker layer from 2 feet 4 inches to 4 feet 4 inches below the surface. Random collections of sherds were made from these ash layers as well as from the surface of the ruin. The indications are that the site was not occupied for any great length of time.

A much older small site lies a few steps to the southwest.

Site 9. About due south of Hawwikku, on the low ridge south of Ojo Caliente there is a small site with the building stone of one or two small houses showing where the sand has blown away. A random surface collection of sherds was made.

Site 10. On top of a small conical hill one mile southeast is a three-sided structure, perhaps 10 by 15 feet, open to the east. All the sherds in sight — a dozen or so — were taken, but are evidently a very mixed lot.

Site 11. The little valley-running east from Ojo Caliente is formed on the north by the mesa on which the ruins of Kettcippawa stand and by a

¹ According to informant, Francisco Utima. Cf. Mindeleff, 83.

series of low hills on the south. At the eastern end of these hills is situated the largest of the hot springs, *Ky'akwyina*.¹ Not over seventy-five yards away and close to the eastern slope of the hill is Site 11, a large L-shaped ruin roughly built of lava blocks from the hillside above. It is now much destroyed but its general proportions can be made out (Fig. 3c). A number of confused heaps of lava lie on its southern side; some may be isolated houses. A random surface collection of sherds was made.

Site 12—Ky'atcekwa.² This is a small establishment of the Kolliwa type, but lacking corrals, and the sherds found there are of the same sort. It lies about half a mile east of Ojo Caliente on the mesa where Kettcippawa stands: from one wall of the buildings the mesa drops precipitously, from the other the slope is steep. The ruin consists of a series of scattered small buildings, each comprising a few rooms in a line along the mesa edge. Room sizes vary — 7 by 15 or 18 feet. A random surface sherd collection was obtained.

One similar structure (10 by 12 feet ?) is located on a small knoll alongside of the wash just at the foot of the cliff here. Its sherds are identical with those of *Ky'atcekwa*.

Site 13—Kettcippawa. Mindeleff's survey³ seems an adequate description of the superficial characteristics of this ruin dating from the Spanish occupation. Ashes and sherds are strewn over a considerable area around the ruin. It would seem that the ruined Spanish church here was built outside of the original pueblo and that it was subsequently enclosed by the expanding house clusters, so that the oldest part of the pueblo is probably that along the slight ridge northeast of the church. A trial trench, dug as close to these house walls as possible, revealed ash to a depth of 4 feet 6 inches at which point the original mesa surface was reached. No evidence of a change in pottery types was encountered, so that it was not considered expedient to make stratigraphic observations. A comparison of a small sample of sherds from the lowest part of this ash heap (3 feet 6 inches to 4 feet 6 inches) with those from the surface shows no material differences. Our conclusion is that the pueblo was not occupied for any considerable period.

Site 14. East of Kettcippawa is a series of interesting sites which appear to have escaped the notice of earlier investigators. Beginning about

¹ water + out?

² water + sweet? Hodge, (a), 148, evidently refers to this cluster of ruins in speaking of "T'kanawe (a triple pueblo of which Kechipauan formed a part), on the mesa to the south-eastward [of Hawwikku]." The sherds of this cluster, however, evidently post-date those of Kettcippawa.

³ Mindeleff, 81-83 and Plate LXIX. The church appears to be built, at least in part, on top of an ash heap.

a quarter mile from Kettecippawa and extending along the ridge to its eastern brow half a mile away are six or more little sites. All show similar characteristics; a scattering of small stones and ashes on digging. Sherds are plentiful on the surface and all of one type, "slab-house." Random collections of sherds were made at three of these sites, the easternmost (14-a), westernmost (14-c), and one between (14-b).

Excavations were made in the largest site, the most eastern. Here, as in the other sites, small building stones were found; small in amount in proportion to the size of the site. This seems unusual since larger stones abound on the mesa and were used at Kettecippawa. In addition, several large slabs, a foot or two across, were found at one point in an ash layer. Nearby several manos and an open fireplace were uncovered: a circular depression, eighteen inches across and a foot deep, half lined with stones. Its position on the hillside would indicate that it lay outside of any house structure. It seems safe to say that the characteristics of this site, small stones and large slabs, and pottery, are identical with those of Site 40, Shoptluwwayala (see below, p. 227). In all probability this is a village of "slab-houses."

Site 15. A single small site similar to those of Site 14 lies opposite Kettecippawa at the foot of the mesa alongside of the Ojo Caliente wash. Here too only small building stones are found. A random surface collection was made.

Site 16. Ascending the valley in which this wash flows the first site seen lies close to the foot of Kettecippawa mesa at its eastern extremity. A few sherds among the rocks of the talus indicate some sort of settlement.

Site 17. Continuing directly east from this place a ruin is found on the point of the ridge extending westward on the north side of the valley. The site is three and a half miles from Ojo Caliente. The ruin is fairly well defined: a double row of rooms 65 feet long and then a single row for 20 feet extending along the ridge. A random collection of sherds was made from the surface here.

Several vague groups of building stone — probably single-roomed houses — with similar sherds lie west of this ruin.

Site 18. A larger site lies a quarter mile east of Site 17 on the backbone of the same low ridge. This ruin measuring 70 by 20 feet extends along the crest of the ridge. Extending from it down the slope to the south is a shallow reservoir, 50 by 100 feet. The retaining wall of this structure is of masonry, partly a laid-up wall and partly of slabs set on edge. A random surface collection was made.

One hundred feet west of this is another group of rooms.

Site 19. A small ruin is situated half a mile east of the last site at the inner end of the same ridge. A random surface collection of sherds was made.

Site 20. Continuing up the side valley due east for about five miles from Ojo Caliente a group of ruins was found in the widened section of the valley. The westernmost is a small ruin on the edge of a little hill north of the arroyo. The pottery on this site is similar to that of Site 24 (q. v.).

Site 21. This ruin lies on the brow barely half a mile east of south of Site 20. It is the largest single house of this group of ruins: building stone is scattered over an area 30 by 50 feet. A random surface collection was made.

Site 22. Directly east of the last ruin and half a mile distant is another, similar but smaller. Black-on-red pottery occurs in a small percentage at this site, but by some accident was not included in the random surface collection made here.

Site 23. To the northeast of Site 22 and but a short distance from it, that is, in the middle of the valley, is a small ruin on a knoll. A random surface collection was made.

Site 24. The most easterly of this group of ruins lies close to the foot of the mesa at the northeasterly edge of the little basin. Here several small houses are perched on a series of little knolls between the talus slope and the arroyo. Each cluster is small — a few rooms only — and now much tumbled down. Random collection of sherds were made at the clusters at the extreme west (24-a) and east (24-b).

The location of the fields cultivated by the inhabitants of this basin is not clear. The valley here is badly eroded and the main arroyo is now very narrow and deep. The drainage down the sides of the basin may, however, have been caught in storage reservoirs. But this section may never have been cultivated; fields in more favorable localities, as near Ojo Caliente, being used.

Site 25 — Hawwikku. This ruin lies on the point of a spur projecting southward from a low, rounded hill into the center of the broad plain west of Ojo Caliente. More exactly it lies one and a half miles northwest of that village. The remains of this pueblo, occupied at the time of the conquest, have already been described by Mindeleff.¹ Inasmuch as this ruin was not available for the purposes of the present inquiry only a random collection of potsherds could be taken from the surface of the site.

Site 26. There are three groups of ruins on the western slope of this low hill. The first, half a mile north of Hawwikku, is comprised of several small houses. A random collection of sherds was made at the southernmost, Site 26.

Site 27. A single house lies three hundred feet west of Site 26. A random surface collection was made.

Site 28. The second group of ruins is not quite a quarter mile north on

¹ Mindeleff, 80 and Plate XLVI. Also Hodge, (a), 146 et seq.

the same slope. These are the remains of two or three small buildings. A random surface collection was obtained.

Site 29. The third group of ruins is a mile north of Hawwikku and consists of a cluster of single-roomed houses. A random surface collection was made.

*Site 30 — Acentelowa.*¹ Nearly two miles north of Hawwikku the Zuñi River swings eastward until it meets a spur from the ridge on which Hawwikku stands. At this point are the ruins of two buildings, the first of four rooms end to end, the other an isolated single room. An arroyo enters the river just south of the ruin; its broad delta now under cultivation. A random collection of sherds was made.

A small older site is on the extreme end of the spur near the river.

Site 31 — Mumpalowa. From Ojo Caliente the road to Zuñi runs due north for a little more than four miles. At this point the road divides, the left branch running west to the river which it follows to Zuñi, the other taking a northeasterly direction directly toward the town. Just south of the fork and east of the road lies a single-roomed structure, 8 by 10 feet, called *Mumpalowa*. It seems probable from the character of the masonry and the mixed lot of sherds present, that the house was occupied at an early period and again quite recently. The large wash just south of the ruin is now under cultivation.

*Site 32 — Hampassawa.*² The wide, open valley between Ojo Caliente and Zuñi contains no ruins known to us except Mumpalowa and Hampassawa. The latter occupies a little knoll on the south bank of the river four and a half miles below Zuñi. It consists of a few rooms, some of which may have been reconstructed more than once. A random collection of sherds from the surface of the knoll shows this.

Kwakina was said to lie northwest of Hampassawa, but we did not visit the ruin.

Site 33 — Pinnawa. A mile and a half west of Zuñi, a spur of hills projecting into the valley from its southern border terminates at the south bank of the river in a low knoll. On this lies the ruin of Pinnawa, now almost entirely destroyed. The walls shown on Mindeleff's map³ are still faintly traceable, otherwise only a confused scattering of small building stones marks the site. Some of these walls are evidently those of recent corrals, etc., although some may follow old lines.

A trench at the brow of the southwestern slope of the knoll — where

¹ rocks + crooked?: so named by Francisco Utima, Tea'lowa according to Gov. Lewis. The confusion in naming Sites 8 and 30 is reflected by Mindeleff, 83, who was informed that there was a "series of ruins called Chalowe." The group he refers to probably included Sites 8 and 26-30 and perhaps others. A reference to the sherd analyses shows that these were not all occupied at the same time.

² Mindeleff, 83.

³ Mindeleff, 86. This volume, p. 22.

Mindeleff indicates a curved wall — showed only scattered débris. Excavation in the center of the northeastern corral — not ten yards from the peak of the knoll — uncovered a refuse heap 6 feet 6 inches in depth. Similar trial trenches here and there over the site indicate quite clearly that the original pueblo was a small cluster of houses perched on a little knoll, its present apparent size being due to the scattering of masonry débris in the building and rebuilding of corrals subsequent to its abandonment.

A section of the deep ash heap one yard square in area was removed six inches at a time. This ash heap, like all others found, was strongly marked by horizontal bedding. From the surface downward there was successively a mixture of dirt and ash for 18 inches, clear ash to 5 feet, and the mixture again to the original surface at 6 feet 6 inches below the present surface, broken also by a thin layer of clear ash at 5 feet 6 inches. The section contained a very large quantity of potsherds, over six hundred of them being taken from the ash between 4 feet and 4 feet 6 inches below the surface.

Site 34 — Tetlnatluwayala: *Site 35 — Te'allatashshanna.* A short distance south of Pinnawa on the same sloping ridge lie half a dozen scattered houses, the southernmost, half a mile from the river, — single rooms probably, now uncovered and soon to be reburied in shifting sand. Two of these are now marked by shrines.¹ Manos are scattered about and broken pottery of similar type in all of the sites. Here, as was uniformly our experience in the small ruins, the sherds were thinly scattered, and no ash layer deep enough for stratigraphic observation could be found, so that we had to be content with a random sherd collection from the surface.

Site 36. Following a little arroyo down the slope towards Zuñi for two hundred and fifty feet, we came on a still buried ruin through which rain wash had cut for fifty or sixty feet. Sherds showed plentifully along the arroyo and a random collection of these was made.

Site 37 — Hattsinawa. On the opposite bank of the Zuñi River from Pinnawa, but several hundred yards nearer town, is a knoll bearing the débris of Hattsinawa. No building stone is in sight on the surface, and the excavations over the entire top of the knoll failed to bring any structure to light but did turn up some building stone.² Ashes appeared in quantity

¹ Page 10. This and all succeeding references of this character are to Parts 1 and 2 of this volume.

² Page 7. The presence of pebbles strewn on the surface of this site and Shoptluwayala and the absence of masonry thereon seems in no way significant, for the pebbles appear to be the remains of a layer of conglomerate which capped these and other knolls and prevented erosion of the spot. The conglomerate is to be seen on the hills to the north and to the south. In addition to this fact some masonry was found at both sites on excavating. It must be remembered that Zuñi and other pueblos, now abandoned, lie in the middle of a broad valley several miles from the source of building material, the talus slopes of the bordering mesas. In consequence ruins in the vicinity of the town have been stripped bare of stones, except for a few unusable pieces.

only in one spot, on the southern or river side, where a layer of ash much mixed with dirt but only eight inches deep appeared. Sectioning was, therefore, out of the question, but a random surface collection was made.

It seems probable that only a single house of a few rooms stood slightly riverward of the center of the knoll.

Site 38. Half a mile below Zuñi the river makes a slight bend toward the southwest. At this point, but two hundred fifty feet from its north bank, potsherds and a few stones are scattered over the area fifty feet square. The remains of a little ruin, probably of not more than a room or two, are evidently buried there. A random collection of sherds was made.

Site 39 — Hallonawa. Immediately opposite Zuñi, on the south bank of the river, is the flat knoll where the ruins of Hallonawa once stood. Superficially, nothing remains of them now, save an occasional potsherd; this seems to have been the case in 1885 as well. The site is now largely covered by occupied houses and traders' stores, so that operations today are well-nigh impossible.

It would seem from the published accounts of earlier investigators¹ that the pueblo was relatively small, and lay principally east of the house of the Hemenway Expedition (still standing) on the highest part of the knoll, with refuse heaps on the south slope.

Test holes sunk into the southern slope of the knoll brought some refuse to light; in one case a layer of mixed ash and dirt 18 inches deep and in another 3 feet 6 inches deep. The sherds recovered in these excavations were of identical type.

Site 40 — Shoptluwayala. In front of the government day school northwest of the village is a low elliptical mound, 230 feet long, rising but slightly above the surrounding plain. The place is marked by a shrine and an abundance of small fragments of pottery. No building stone lies on the surface, but some was found in excavating the site. The absence of masonry is undoubtedly due to the proximity of Zuñi and Hallonawa, both pueblos far from natural sources of building material.

A trench carried across the short diameter of the mound brought to light evidences of a superposition of structures here. A layer of mixed ash and dirt was found over the mound to a uniform depth of about two feet. On the surface and in the upper part of this layer were sherds of certain types of pottery, including redware, found together elsewhere in similar associa-

¹ Mindeleff, 88 and Plate LVII; Fewkes, (a), 103. Pottery from this ruin is also described by Matthews, 151 and 153, Fewkes, (c), and Cushing, (a), Plate II. We cannot agree that Hallonawa occupied both sides of the river, for the pottery from this ruin differs essentially from that of Zuñi. Further, the existence of "old" walls in Zuñi in 1885 cannot be adduced as evidence favoring this point, for those walls must stand (or stood) far above the original knoll on which Zuñi is built. We will return to this point later.

tion. Deeper in the mound were other types, whiteware, such as were found at Sites 3, 7, 14, 15, and 50, and associated with these an unusual type of structure.

This structure is of the type known as "slab-house." Elliptical in shape, 11 by 8 feet inside diameters, it lay with its floor excavated 16 inches below the original surface of the mound, and now covered to a depth of over 4 feet.

The wall, still standing in the original excavation and in some places for a few inches above, was 4 to 6 inches thick. It was made of adobe plaster over small stone slabs set on edge in a row near its outer face. Above the slabs the adobe alone formed a wall of the same thickness. There was no evidence that the adobe had been formed into rectangular bricks, but rather that it had been built up in rough masses. The slabs were all small, about 8 by 10 inches across, thin, irregular, and not dressed. While they were set end to end and the intervening spaces filled in with smaller stones similarly placed on edge, the resulting structure was in no sense a masonry wall. No entrance gap in the structure could be found, but it must be remembered that practically nothing remained except the portion below the original surface of the mound. The floor of the house was covered by a layer of chunks of charcoal, 2 inches deep over all and in some places mixed with earth to a depth of 6 or 8 inches. This looked very much like the remains of a wooden superstructure, burnt and fallen in.

Alongside of this slab-house a hole 3 feet in diameter had been sunk below the original mound surface for a depth of 5 feet and had been subsequently refilled with mixed dirt and ash. Near the mouth of this hole were piled several stones which may represent the remains of a coping. Its purpose remains a mystery: it seems too large for a post hole and too free from débris for a well or a cooking pit.

In another part of the knoll a fireplace similar to that found at Site 14 was found. This was evidently outside of any house structure.

Zuñi. The growth of modern Zuñi has been treated in an earlier section of this volume. Dr. Kroeber has also given there the pertinent results of our excavations within the town, the location of excavations, extent of the original knoll, etc. The pottery data are given below (Table II) and historical notes in a later section. One or two other points may be brought together here.

Excavations showed only modern refuse at the points N, P, S, U, and V (see p. 202) as well as other points. Similarly for the excavation KK, which proves conclusively that the southeastern house block is of recent date. On the other hand, the southern block is relatively ancient, since its foundations (at Q) rest on sixteenth century refuse washed from the knoll to the north. Unfortunately, no ruined section appears in the southwestern

block. Working nearer the main house block, ancient refuse was found at the foot of the original knoll at Muhhewa and east of Room 105 (K and L) and in addition buried walls at the latter place. Working in between the main and northern blocks, similar results were obtained in the Rat Plaza and its entrance (LL and MM). Thus, working in toward the heart of the town from all sides, we found the oldest sherds in immediate contact with the original knoll just as might be expected. These results are as definite as can be hoped for so long as the town remains occupied. They indicate that the oldest section of Zuñi was the main block and the western end of the north block perched on the original knoll; then the town expanded along the base of the slopes, forming the southwestern and southern blocks and the eastern end of the main block; finally, the three eastern blocks were built on level ground.

An interesting confirmation appears in the reports relating to the early American occupation. Simpson (1849) publishes a sketch of Zuñi,¹ evidently drawn from the vantage point offered by the roofs in the vicinity of what are now Rooms 50 and 60, showing two or three houses in the eastern block and one or two in the southern, but the northeastern does not appear at all. The expansion had presumably not proceeded far east of the church at that time. Indeed, Simpson, Whipple, and Möllhausen refer to the compactness of the pueblo, houses extending over most of the streets.

The drift away from the pueblo must have begun fairly recently. There were evidently no permanent structures outside of the pueblo in Whipple's day (1853) except for a small group at Hallonawa shown in Möllhausen's two drawings.² Neither Simpson, Sitgreaves, Whipple, nor Möllhausen refer to villages at Ojo Caliente or Nutria. To be sure, not one of them passed near these places. The lower Pescado village had been established however, but when seen by Simpson it was in ruinous condition and only visited by planting parties in the summer and by occasional herders. Even today the farming villages are occupied throughout the year by only one or two families: the fact that they are occupied at all bearing an obvious relation to present safety from hostile raids.

*Site 41 — Amossa.*³ The northern wall of the valley opposite Zuñi is a long low mesa ending abruptly four miles west of the town and from this the big mesas, Kwiliyallanna (two + mountain) and the Zuñi Buttes rise, towering a thousand feet above the valley. At the southwest corner of this mesa is Arch Spring with the ruin of Amossa above it on the mesa.

¹ Simpson, Plate 59.

² Whipple, opp. p. 67; Möllhausen, opp. p. 98.

³ rock + head or boss?

Judging by a casual inspection this is of the Kolliwa type: its sherds are also similar.¹

A mile or so northwest of Amossa is A'tella Cillowa, a ruin said to lie close under the Zuñi Buttes. Nearby is another ruin.

Site 42 — Heccotalalla. On the same mesa with Amossa and two miles northeast from it is Heccotalalla² close under the foot of Yallalanna (mountain + big), the easternmost of the two big mesas seen from Zuñi. At the foot of the mesa is a shelf several hundred yards broad into which head several small canyon about 100 feet deep. The ledge is sand-covered, now supporting a peach orchard and large cottonwoods: corn might once have been grown there. Water from permanent springs just under the cliff flows in a little stream across the ledge into the head of one of the canyons. Sandy patches in these canyons and broader areas less than half a mile distant may have been cultivated. On four of the knoll-like promontories between the canyon heads stand clusters of ruins conforming closely to the contour (Fig. 3a). The situation could hardly be bettered from the standpoint of defense and with its adequate water supply and fields near by might have sheltered a large population.

The ruins are evidently those of a refuge village identical in character with Kolliwa and Wimmayawa.³ House remains are quite extensive, but the corrals are few in proportion to the other refuge villages. Sheep might have been herded against the cliffs here, however. There is great uniformity in size of rooms and corrals in all the refuge villages — 7 to 9 feet by 20, 25 and 30 feet. The ash heaps here are but a few inches deep. A random collection of sherds from the surface indicates that the ruin dates to post-Conquest times.

*Site 43 — "W."*⁴ Only a few sherds show at this site in the fields half a mile north of the village.

Site 44 — Shunntekkya. East of Zuñi, the ruin on the extreme south is Shunntekkya. South of Towwayallanna a deep and narrow canyon runs for miles into the Zuñi plateau. The ruin was pointed out on a ledge to the east of the mouth of this canyon, about six miles southeast of Zuñi. From a reliable description it appears to resemble Kolliwa in character, and in fact, the sherds from the site collected by Dr. Kroeber⁵ indicate that this too is refuge village of post-Conquest times.

Site 45 — Kyakkima. Two miles northwest of Shunntekkya is Kyak-

¹ Whipple, I, 71.

² Fewkes, (a), 111, as Hesh-o-ta-thlu-al-la.

³ Cf. pages 24 and 30.

⁴ Page 28.

⁵ Page 34.

kima, perched on a talus slope close under towering Towwayallanna. The ruin is sufficiently characterized by Mindeleff's description and Kroeber's amending statements.¹ The pueblo covers a fairly large area, larger in fact than shown on Mindeleff's plan, for there was evidently a row of rooms along the southern brow of the knoll, another on a ledge midway down the southern slope, and isolated rooms between at the southern end. We would venture that none of the houses in the ruin was over one story in height.

The chief refuse dumps are on the eastern and southern slopes. Ash appears in the first place to a depth of only three feet and but two feet in the latter. This disappointing shallowness and the slight range in pottery types in the heaps precluded stratigraphic work. Collections of sherds were made from the surface and trenches, however. More obsidian chips were seen on the surface here than at any other site in this region.

*Site 46 — Kyakkima West.*² Kyakkima stands on one side of a gulch running into Towwayallanna: on a talus slope on the opposite side are many scattered sherds. In fact, the sherds are plentiful all over this knoll, up to its very top a hundred feet above the valley floor. But, although the search was carefully made, no signs of a structure referable to these sherds could be found. A random collection of the sherds was made from the surface here.

Site 47 — Towwayallanna. Three miles southeast of Zuñi the mile-long mesa, Towwayallanna, rises for a thousand feet above the valley. Scattered over its southern end and directly above Kyakkima and Kyakkima West are the ruins of thirty-eight separate buildings. All of these, with the exception of two, are small. We must agree with Mindeleff and Fewkes that the statements of Cushing and Bandelier that these buildings fall into seven groups "corresponding it would seem, to the original Seven Cities of Cibola" is absurd. So far as we can judge from Mindeleff's admirable plan, with which Bigelow's agrees fairly well, no grouping whatever of the buildings is discernible.³ Dr. Kroeber has collected sherds at random at this site.

Site 48 — Mattsakya. A ridge of foothills extends northwest from Towwayallanna touching the river nearly two miles east of Zuñi. The remains of Mattsakya lie scattered over the knoll that terminates this ridge at the river end. The ruin presents a confused mass of debris and only the general position of its rooms can be traced. Building stone is scattered more

¹ Mindeleff, 85 and Plate LII; this volume, 22; Fewkes, (a), 109. Mindeleff's plan is oriented with north to the left.

² Page 10.

³ Cushing, (a), 156 and Plate IV; Whipple, I, 69; Mindeleff, 89 and Plate LX; Fewkes, (a), 110; this volume, 28. Bandelier, (b), 334 has six groups instead of Cushing's seven.

thickly along the eastern ridge than Mindeleff's plan¹ shows, so that it would appear that the principal house group was here. There are no evidences of any structure in the flat area on the western slope of this ridge, however.

The most favorable, and therefore presumably the oldest, building location is along the ridge forming the eastern backbone of the village. Sherds are scattered thickest over the eastern slope of this ridge and here was found an ash heap about 4 feet thick.

Into this two sections were cut, each a yard square, and the sherds were removed in six inch intervals. In the first section, near the southern end of the ridge, two skeletons were found in the original earth below the ash layer. One of these lay entirely outside of the section area; the skull of the other extended under the section. But inasmuch as the layers of charcoal in the ash heap continued unbroken horizontally over this skeleton, it is clear that the burial was made before the ash heap accumulated. In the second section, near the northern end of the same slope, an old wall was encountered below the ash heap; about this soil had drifted or been filled before the ash heap was formed. The base of the wall stood on the original hillside over six feet below the present surface; its upper part lay within the ash heap for about six inches. While burials and a wall older than this immense ash heap were found, it did not seem feasible to search for a still older ash heap. We believe, however, that the sherds from it represent the range of occupation of Mattsakya fairly closely.

Judging by the level on which the old wall stood and by the extent and thickness of the ash heap, it would appear that the walls of the structure along the ridge must still stand four or six feet high though buried. In that case the structure was presumably only one story, or in part only two stories high. We agree with Fewkes that the ruin was not large.²

Site 49. This is a small site in the sand dunes, one-eighth mile north of the Zuñi irrigation canal and one quarter mile west of the Gallup road. Building stone has been much scattered by washing so that a structure cannot be defined. A random collection of sherds was made here.

Site 50 — He'i'tli'annanna. Two miles due north of Zuñi, close to the long mesa on the northern edge of the valley, is a little knoll on which stands an abandoned shrine. In the vicinity of this are scattered sherds of the "slab-house" type. Kroeber has tentatively put forward the suggestion³ that the presence of pebbles on the knoll was of cultural significance, but excavation shows that these are merely the remains of a disintegrated con-

¹ Mindeleff, 86 and Plate LV; Bandelier, (b), 336; this volume, 22.

² Fewkes, (a), 110.

³ Page 32.

glomerate (cf. Site 37, p. 226). Just north of the knoll is an area not over fifteen yards square where ash and sherds are mixed with the soil to a slight depth, but excavation revealed no trace of a structure.

Site 51 — “Y.” This site lies a quarter mile northeast of He’i’tli’an-nanna on a low ridge which parallels the higher mesa to the northwest. It is located on the outer end of a small spur.¹ A small but deep canyon cuts through the ridge fifty yards east. Water for the occupants of this site might have been obtained from the “tanks” in the rocky bottom of this canyon, or by digging for seepage in the wash above.

Vestigial remains of a single-roomed (?) structure, of indefinite shape, probably with masonry walls was found. The building stone has presumably been carted off with stone quarried in this ridge to go into the building of modern Zuñi.

Kroeber’s “Site X” probably lies a mile due east of this site.

Site 52 — *Kolliwa*. Half a mile northeast of Site 51 — that is, nearly three miles northeast of Zuñi — are the two house clusters of Kolliwa.² They lie on two promontories on either side of the head of a small and deep canyon which cuts into a bench half way up the mesa. While separate structures, the two clusters are identical in construction and pottery, and were, therefore, coeval refuge villages. The structures consist of a cluster of dwellings with large corrals attached; each conforming closely to the configuration of the knoll on which it stands.

Kolliwa appears to have been a stronghold into which sheep were driven during raids by Navajo (?) in post-Conquest times. It was occupied only for a short time, or for several such periods, for the ash heaps are but a few inches thick and the scattered sherds show no great range of type.

Site 53 — *Wimmayawa*.³ Three quarters of a mile northeast of Kolliwa is Wimmayawa capping a small hill at the eastern edge of the same mesa. The ruin is close to the Gallup road, quite three and a half miles from Zuñi. Like Kolliwa, it consists of a small cluster of inhabited rooms, none over one story high, with sheep corrals attached. The area of habitations is somewhat more extensive than at Kolliwa, but was inhabited by not more than a few families. There are indications that the original corrals were smaller than those now standing, but the removal of intermediate walls has given the corrals their present large size (Fig. 3d).

The pottery, like that of Kolliwa, is evidently post-Conquest. The ash

¹ Page 33.

² Page 24. Kroeber’s plans are essentially correct. We might add, however, that both corrals in West Kolliwa are entirely closed by walls and there is another small room in the cluster there.

³ Page 30.

heaps are too shallow for stratigraphic work and the pottery types present no great range. This was obviously a refuge village occupied like Kolliwa for a short period only.

Site 54. A small reconstructed house, about ten feet square, lies just west of the Gallup road where it enters the low hills two miles from Zuñi. A random surface collection of sherds was made.

Site 55. Nearer the Gallup road scattered potsherds were seen but no building stone. Some of these were collected at random.

Site 56. Skirting these low hills which border the Zuñi Basin in this, its northeastern corner, we find the following sites. Two miles due northeast of Zuñi and an eighth of a mile from the irrigation canal is a small house ruin on a knoll. The house measures 20 feet by 10: its walls are fairly distinct. A small collection of sherds was made here.

Site 57. Half a mile east is another small ruin on the slope of a low hill. Now nearly obliterated, a low mound of scattered stones, about twenty feet square marks the former position of the house. Sherds are scattered down the slope to the west.

Site 58 — Katika. Further east the low hills swing northeast and are approached quite closely by the river. Less than half a mile from Black Rock the hills turning again directly east form a little cove in which lies Katika. Masonry débris is heaped over an area 60 feet by 25. Two rooms about 8 feet square, can be distinguished at the eastern end. This small house is about twenty-five yards north of the irrigating canal, and Mr. R. J. Bauman says that potsherds, whole vessels, and turquoise were found when the latter was constructed. A random collection of the sherds here was made.

Site 59. The Zuñi Basin heads at its eastern end in a long semicircular cliff of black lava on which the agency now stands. This is known locally to the whites as "Black Rock." The Zuñi River poured through a gap in this rock — now filled by a dam — dropping one hundred feet in its passage. We have examined the fields below and above the cliff for ruins, but while recent structures are numerous we could locate only two ancient ruins. Half a mile west of the agency is a little ruin perched on a knoll close under the cliff. The main Zuñi-Black Rock road cuts through the ruin and during its construction sherds and skeletons (?) were found. The house is built of lava blocks and has been reconstructed since its first abandonment. The sherds here are of several distinct periods mixed.

Site 60. Directly above on the cliff is a small ruin. It lies close to the road which traverses the cliff. The house is L-shaped, the sides respectively 40 and 20 feet long and 10 feet wide. Potsherds are plentiful on the surface here.

Site 61. Interrupting the west-to-east sequence in the description of these sites, there are a number of ruins north of the Zuñi Basin to be noted. Following the Gallup road for about seven miles from Zuñi a road is found branching off to the left to Manuelito on the railroad. Continuing west on this road for two miles the ruin of a large pueblo is found close under the eastern foot of a low mesa. The ruin is roughly rectangular, seemingly with only a single row of rooms around a central court in which lie some other poorly defined structures. (Fig. 3f.) One hundred feet west of the main building is a small F-shaped structure 90 feet long with one wing 50 feet long. We suspect that our random collection of sherds from the surface here, the governor of Zuñi assisting, contains a lower proportion of redware than is actually present. On reference to Table XI it will be noted that this type of pueblo is usually associated with a higher percentage of redware.

There is said to be a three or four-roomed ruin on the mesa above this pueblo, and another a mile southwest on the mesa — but the latter could not be found. Another small ruin, perhaps recent, can be seen on a ledge of the mesa opposite.

Site 62. More than a mile northeast across the valley from the large pueblo is a ruined settlement of nineteen small houses strung along the foot of the mesa. The houses have for the most part three to six rooms: one has a dozen. Three of the ruins lie on small hillocks and a fourth on a ledge of the mesa: the remainder lie on the valley floor close to the mesa. So far as inspection on the spot can show, the sherds at all of these ruins are identical in type and proportions.

Site 63. A small site in the main valley, located by Mr. Nelson, lies half a mile east of the reservoir at Black Rock and south of the Ramah road.

Site 64. Four miles east of Black Rock the valley is narrowed to a half mile in width by two high mesas. Several small ruins lie in the valley here. Site 64 is nothing more than a patch of sherds scattered in the sand to the north of the Pescado road four and a half miles from the agency.

Site 65 — Heppokoa. This site is said to lie on a ledge pointed out half a mile east of Site 64. The ledge is located at the eastern corner of the mesa on the northern side of the valley.

Sites 66-68. Three small ruins were located by Mr. Nelson along the road which skirts this mesa and leads to Nutria. All three lie within a mile or so of the main valley.

Site 69. Returning to the Pescado road a small ruin is found north of the road a short distance east of the junction of Nutria and Pescado creeks. Only a little masonry shows. A random collection of sherds was made.

Site 70. At the eastern foot of the southern mesa is a small house ruin between the road and Pescado Creek. It is half a mile east of Site 69. A random surface collection of sherds was made.

*Site 71 — Heccotaluptionsinna.*¹ Opening into the main valley from the south is Horsehead Canyon, a long valley penetrating for miles into the Zuñi plateau quite to the headwaters of the Little Colorado proper. A deep arroyo winds down this valley, joining Pescado Creek five and a half miles east of Black Rock agency. Situated on a low knoll at the junction of the streams is a large pueblo of the rectangular type.² The walls, while almost entirely tumbled down, can at least be traced (Fig. 3e). The principal refuse heap lies southeast of the ruin, but is only 2 feet deep. A section (4 square feet in area) was made in this heap and the sherds removed as usual from successive layers 6 inches deep. The quantity of plaster in the first foot and a half of this heap was somewhat unusual for Zuñi ruins.

A small ruin is said to lie half a mile southeast of this one. Mr. R. J. Bauman, Superintendent of the Zuñi Reservation, informed us that there are a number of ruins in Horsehead Canyon including one or more small cliff houses, which from his description, appear to be similar to that east of Ramah, Site 125. We found it impossible to enter this canyon with a wagon, so that investigation of its archaeological resources had to be postponed indefinitely. There are several ruins at its upper end, called Soldado Canyon, which will be described later (p. 250).

Site 72. Continuing eastward in the main valley several ruins were found along the foot of Attciatekyapoa,³ the big mesa bordering Horsehead Canyon on the east. The first is a mile above Heccotaluptionsinna: a single-roomed house north of the Pescado road. A random surface collection of sherds was made.

Site 73. A similar ruin, a single room, is south of the road a short distance east. A random surface collection was made.

Site 74. Half a mile east is a ruined house group, 100 by 20 feet, to the north of the road. A random surface collection was made.

Site 75. Directly across the road from the last, and nearer the mesa, is another ruin, 55 feet by 20. A random collection of sherds was made from the surface of this ruin.

Sites 76 and 77. Three-quarters of a mile east of these ruins is another pair. Site 76 is a small house of two rooms, each 10 by 6 feet, a short distance south of the road. Site 77, which is nearer the road, is merely a confused mass of débris with but few sherds showing. A random surface collection was made at the first of these.

Site 78 — Hecota'utlla. Directly opposite the last two ruins Pescado

¹ ruin + yellow.

² Fewkes, (a), 112, Hesh-o-ta-sop-si-na; Bandelier, (b), 333, Heshota Thluctzinan; Simpson, (a), 117, evidently saw this ruin when less aggraded.

³ attcianE, knife + tekyapoa, hill.

Creek swings close to the mesa on the northern border of the valley. At the eastern corner of the mesa is a large polygonal pueblo built on the narrow stretch of slightly sloping ground between the creek and the foot of the mesa. No break appears in the outer wall of the pueblo, which can still be roughly traced in its polygonal, almost circular, course. The east-west axis of the ruin is about 420 feet, the north-south axis about 350 feet. The interior contains other structures and refuse heaps, but a heavy scrub growth and much *débris* obscures their character.¹

The ruin was partially excavated in the winter of 1888 by members of the Hemenway Expedition; now none of the ash heaps located in the interior can be depended on for stratigraphic observations. A random collection of sherds was gathered from the surface, but these probably do not represent true conditions. The sherds seen here and the whole vessels figured by Fewkes closely resemble those of Hallonawa, both ruins being relatively recent from the standpoint of Zuñi ruins as a whole. We cannot agree with Fewkes² on this evidence that the circular form of ruin is very old in the Pueblo area.

There may be several small ruins in the little canyon immediately north-east of Hecota'utlla. There are certainly a number of them, at least fifteen, along the northern edge of the main valley from this point to the Pescado Springs. Some of these we have visited and their positions are indicated on the map.

Site 79. Half a mile south of Hecota'utlla stands a ruin in the middle of the valley. In its demolished condition it is L-shaped, the long wing 265 feet, the shorter 65 feet, each wing comprising a line of single rooms 8 feet wide. The site has been built on in recent times and a corral stands there now. Few sherds were seen.

Sites 80, 81, and 82. Directly south of this site a small canyon runs for three miles southward into the big mesa, Atteiatekyapoa. Strung along the western side of the canyon close to the mesa are a number of small houses. There are ten of them within three-quarters of a mile of its mouth, and probably more further up. With the exception of the northernmost, Site 80, they are all apparently of similar construction and identical pottery types. Random collections were made from the surface of the first, Site 80, sixth, Site 81, and seventh, Site 82. Site 80 comprises two buildings, the first, 20 by 50 feet, perched on a little spur, the other, 10 by 60 feet, on the canyon floor a few feet below. Site 81 is a high pile of masonry 75 feet by 20, with a shallow depression 40 feet square contiguous to it. Site 82 is smaller, being 10 by 30 feet.

¹ Fewkes, (c); (a), 105-109 and plan; Bandelier, (b), 333.

² Fewkes, (c), 47.

Site 83. This is a much older ruin opposite Site 80 on the eastern side of the canyon. It is only a small ruin and but little masonry shows. Sherds were collected at random from the surface.

Another ruin lies a few feet north of this one: another alongside the road to the coal mine, half way up the mesa to the east. Four more lie near the foot of this mesa between this canyon and a similar one penetrating Attciatekyapoa a mile east. All of these show sherds similar in type to Sites 81 and 82. We suspect the presence of small ruins in the latter canyon as well.

Site 84. At Pescado Springs, sixteen miles east of Zuñi, there are three large ruins.¹ The largest lies west of the westerly spring. It is built on a basalt fault and probably conforms to some extent to the natural configuration. The ruin presents large heaps of masonry lying six to ten feet high, but it is overgrown with brush and stone has been removed from the walls for corrals and houses, so that its outline is obscured. However, it appears to be oval or polygonal, about 215 feet from east to west and about 150 feet on the short diameter. Basalt blocks formed a large part of the masonry. There are small ash heaps in the interior possibly a few feet deep.

Site 85. A smaller ruin, repeating the salient characteristics of that just described, lies adjacent to it a few steps northeast. Between the two a large spring gushes out of the lava fault. The smaller ruin approaches a circular shape, roughly 150 (?) feet in diameter. Buildings evidently followed the outer wall of the pueblo.

Site 86. About three hundred yards east of the westerly spring is the third pueblo ruin. It lies on top of the lava fault, which forms a little cliff twenty or thirty feet high. At its base the easterly springs percolate through the fault. The ruin is of irregular plan, roughly of the rectangular pueblo type but conforming to the shape of the cliff. Its over-all dimensions taken roughly along its major axes are perhaps 200 by 250 feet. The ruined walls now lie in heaps about three or five feet high. They were composed mainly of basalt blocks, but included some sandstone.

There are numerous small ruins in the vicinity of the Pescado Springs, some of which we visited. There is one about a quarter-mile southwest of Site 84 and another was pointed out a like distance from this in the same direction. We suspect the presence of others along the western side of the canyon opening southward from this point. We are told that another small ruin was situated on a knoll at the eastern side of the mouth of this canyon.

Four small ruins, with the same general pottery types as the large ruins here, lie close under the cliff north of the springs. There probably are others there, and some may be found on the mesa.

¹ Simpson, (a), 118; Whipple, I, 65; Bandelier, (b), 333 as Heshota Tzinan.

Three-quarters of a mile northeast of Site 86 a small ruin lies in the open valley. Two others lie at the corner of the hill, half a mile east of this. There may be similar ruins along the hillside in the immediate vicinity of these. All of the small ruins have sherds of the same general type as the large ruins here.

Sites 87-89. Three-quarters of a mile east of Site 86 is a small ruin at the southeastern face of a low ridge; a quarter mile east of this is another and fully a mile east is a third. The ruins are all fairly well defined and measure 15 to 20 feet by 30 to 40 feet.

Site 90. A mile and a half east of Pescado Springs an open valley leads from the north. Three small ruins are located on the western slope of this. There may be others on the same side near its mouth. Half a mile in, that is, two miles by road from Pescado, is Site 90, a small bracket-shaped ruin 60 feet long with wings 40 feet long extending down the slope. The space between the wings is largely filled with *débris*. A random collection of sherds was obtained here.

Site 91. This small ruin lies on a spur over a mile north. It is L-shaped; the main section 36 by 12 feet and the other 45 by 6 feet. A random surface collection of sherds was made.

Site 92. Half a mile north on the same slope is the third ruin. It was a small house of two rooms, 10 by 20 feet outside dimensions. Sherds were gathered at random from the surface of this ruin.

Site 93-94. The Ramah-Gallup road runs northwest between the last two ruins. Three miles northwest of Site 92 is a small ruin a mile east of the road reported by Mr. Nelson. Another small ruin lies at the same distance from the road two miles further on.

Site 95. From the lower Nutria village a draw enters the low mesa toward the northwest. There is a small ruin on the ridge west of the draw: it is about three-quarters of a mile from the village. It may contain two rooms, the area covered by masonry being roughly 20 by 8 feet.

Site 96. Not quite half a mile northwest the ridge terminates in a little peak. Capping this is a mass of masonry *débris* of indefinite form: there may have been from six to twelve rooms here. Sherds were gathered at random from the surface of both of these ruins.

Midway between the ruins the road traversing the ridge passes through a mass of scattered stone and sherds which may have been another house.

It is surprising that more ruins are not to be found in the vicinity of the Nutria village. However, our search was by no means exhaustive. Mr. Nelson was told of a small ruin at or near the head of Nutria Creek. There is said to have been a small ruin in the fields south of the lower Nutria village many years ago.

*Site 97. Heccotaimkoskwia.*¹ Two miles southeast of the upper Nutria village is a large ruin. It lies in the junction of two arroyos in a little valley just west of a gap in the up-tilted sandstone ridge. That is, it is about three-quarters of a mile west of the Perea mail road. The main ruin is six-sided, of regular outline, and fully 350 by 280 feet in greatest dimensions (Fig. 5c). The outer building is two or three rooms wide evidently sloping toward the roughly rectangular court which is filled with low, irregularly distributed remains of structures possibly including two kivas. A section was cut in the refuse heap here.

East of this ruin is a circular wall of stone, 2 feet thick and about 90 feet in diameter. A room about 9 by 21 feet has been built against the north side and there are traces of rooms around the inside.

A small rectangular ruin lies about one hundred yards to the south. It measures 30 by 60 feet and is three rooms wide.

Sites 98-100. Three small ruins were reported by Mr. Nelson in the region south of Heccotaimkoskwia; the first one and a half miles due south, the second two miles further south, and the third a mile west of the second.

Sites 101-102. A large oval ruin lies on the Deracho property on the north side of the Pescado-Ramah Valley about two miles west of Ramah. Immediately above it on the mesa edge fifty feet higher is another building (Fig. 4a). The roughly circular ruin measures 225 by 175 feet on its diameters. The masonry is of sandstone fairly well laid in mud. The outer walls still stand four or five feet high although they have been largely removed for building purposes. The outer row of rooms appears to have been two or three stories high, the building being from three to eight rooms wide. One room measured 11 (?) by 10 feet 6 inches; another 10 feet 6 inches by 12 feet; while three rooms on the south side measured 30 feet together, i. e., about 9 feet per room. Basalt manos, metates, and mauls as well as potsherds were seen.

A long building of some thirty rooms lies along the edge of the mesa above the round ruin. It measures about 190 feet and for fifty feet of its length it is two rooms wide. The back or west walls are three or four feet high: the front wall comes out to the edge of the escarpment.²

Site 103. A small ruin is situated in a side canyon half a mile nearer Ramah on the same side of the valley and opposite Site 104. It is roughly bracket-shaped, 165 feet long with two arms each 45 feet long.

¹ Bandelier, (b), 340 as Heshota In-kuosh-kuin.

² Cf. Fewkes, (a), 113. There are some discrepancies between our measurements and Dr. Fewkes's. The circular depression in the plain referred to by Dr. Fewkes near the ruin must now be aggraded for we saw no noticeable feature of that kind. We cannot support Dr. Fewkes's suggestion that the upper structure is later than the oval ruin for the sherds seen at both were of the same type.

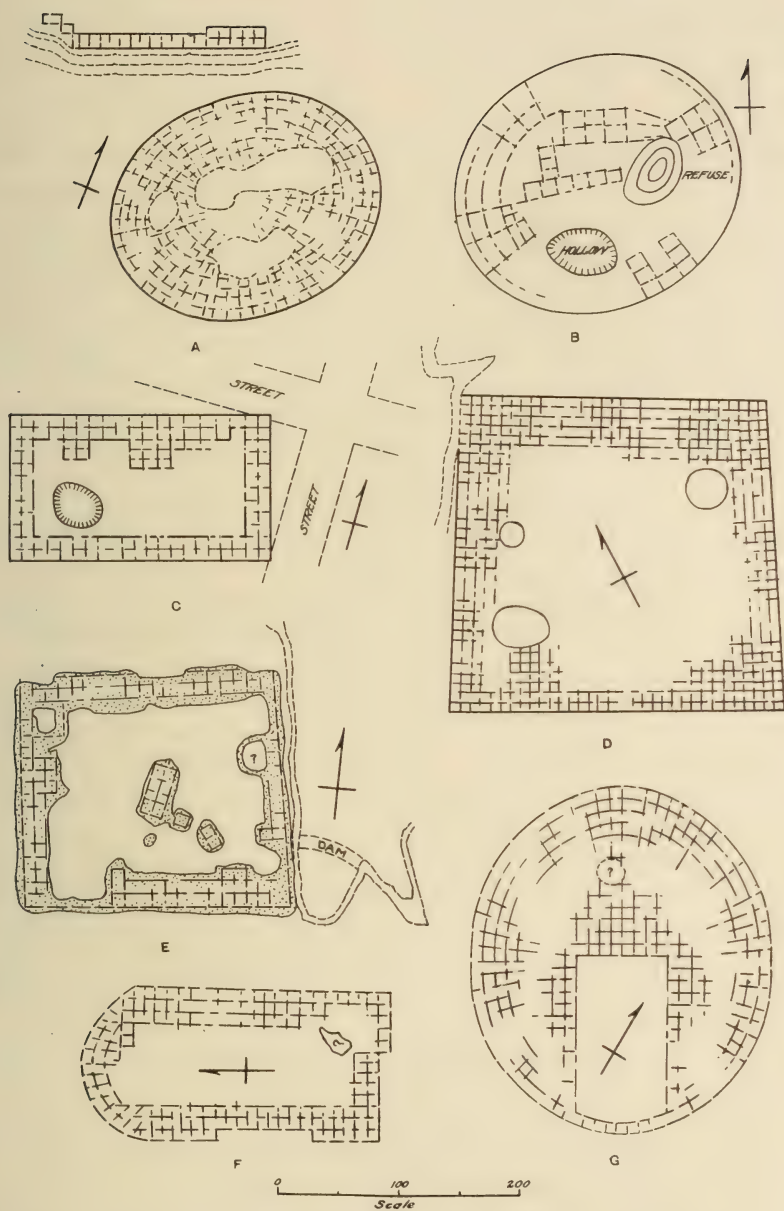


Fig. 4. Plans of Ruins: Ramah District. a, Ruins 101-102; b, Ruin 104; c, Ruin 111; d, Ruin 139; e, Ruin 110; f, Ruin 154; g, Ruin 141.

Another small ruin lies west of this on the top of the wooded hill between the Zuñi-Ramah road and the Zuñi-Ramah valley. It is 70 feet long, two rooms wide with a central part four rooms (36 feet) wide. Potsherds are scarce.

Site 104. Across the valley from the Deracho ruin, Site 101, but a quarter mile nearer Ramah is another ruin of the same type and size on the property of Mr. Day. This pueblo is oval, the outer wall being somewhat angular, not a smooth curve; its long diameter (east-west) is 240 feet and short diameter 204 feet (Fig. 4b). The outer wall is barely visible much of it having been removed to the débris level for building stone, but it still stands in part to a height of five or six feet. The masonry, of sandstone set in mud, is ordinary. The circular building is from one to three rooms wide with houses scattered about the court. Room sizes were 9 by 13 feet and 9 by 12 feet. There is a hollow in the southeast side of the court and a refuse heap in the opposite quarter. In this a section was dug to the original surface at a depth of 7 feet.

Site 105. A short distance east of this pueblo is a small ruin.

Sites 106-109. Four small ruins lie two miles south along the ridge south of the Ramah-Pescado Valley.

Site 110. Six miles west of south of Ramah and about five southeast of the Pescado Springs is a large ruin, roughly rectangular and about 200 feet square (Fig. 4e). The buildings around the roughly rectangular court are not of even width. In the court are several small isolated buildings. The sandstone walls still stand about 6 feet high in the building on the north side; the others from 1 to 4 feet high. Only a few sherds were found here. Large piñon and cedar trees have grown over the ruin. To the southeast a dam has been thrown across a gulch formed by a drop in the swale.

Site 111. In the town of Ramah there is a rectangular ruin standing on the property of Mr. Jess Johnson north of the schoolhouse. The pueblo is of rectangular groundplan, 215 by 120 feet, with a wing extending from the north side into the court (Fig. 4c). The building was evidently two stories high on the outer row of rooms, but apparently only two rooms wide except in one or two places.

Site 112. There is a small ruin between Ramah and the reservoir on the southern side of the valley.

Sites 113-117. Situated on the ridge facing the Ramah reservoir and dam, or rather directly opposite the point of the high cliff north of the reservoir, are two ruins and between them another lies one hundred feet down the eastern slope. All are built of sandstone laid in mud; rather rectangular in plan; probably not over one story high, although the rear set of rooms may have had two stories. The back of the ruins thus faced

the prevailing westerly winds. The northern ruin is about 100 feet or eight rooms long and 22 feet wide. The central ruin is L-shaped, the long arm 100 feet or nine rooms long and the other 45 feet long and extending eastward from this is a wall enclosing a court about 30 by 80 feet. The southern ruin has an arm two rooms long at one end, and in the angle, a round kiva. This ruin seems to have had a low addition partway along the west side. Sherds were collected from the surface here.

Two other small ruins are located nearby.

Site 118. Half a mile south of Ramah and a quarter mile west of Vogt's house is a small ruin on the slope east of the Ramah fields. It is bracket-shaped, 75 feet long with two arms of 30 and 27 feet. The construction is fairly regular, the building and arms two rooms wide, and facing southeast. A room on the northeast side is about 6 by 9 feet. Sherds, flint, lava manos, flint hammerstones, etc., are to be seen.

Site 119. In front of Vogt's house, a mile or more south of Ramah, a small ruin lies partly on the bottom of the ravine and partly on the rock ledge enclosing the ravine. The building is 60 feet long with a western arm of 33 feet. On its eastern end is another structure of a few rooms possibly 36 feet long. There is some slight trace of refuse, but the whole is very indistinct.

Site 120. Two ruins lie on the rocky slope northeast of Vogt's house. The first 400 feet or more east of the house is a small ruin of undressed sandstone laid in mud. There are two buildings, the first two rooms wide, 65 feet long by 18 feet wide; the second at right angles to it on the southwest, 55 feet long and three rooms wide. A single room lies southeast of the first building and just inside the gap between the two buildings is a rectangular box-like construction of upright slabs about 2 feet square and 1 foot 6 inches deep. A room excavated in the first building measured 7 feet along the east wall, 7 feet 4 inches west, 11 feet 1 inch north and 11 feet 3 inches south; the wall stood 2 or 3 feet high; the floor was partly flagged; and a lined fireplace 17 by 18 inches was on the south side. A piñon tree on the ruin measured 3 feet 5 inches in circumference.

The second ruin lies 150 yards north of the first. It is a single house built of sandstone, of regular construction 75 feet long, 24 feet wide except for a short distance at the west end where there was only a single line of rooms about 6 feet wide. Part of a stone ring, such as formed the coping to the hatchway in the roof of the ancient houses, lay nearby.

Site 121. A small ruin lies a short distance east of Vogt's house in the ravine opening from Josepina Canyon. It is constructed of stone and quite regular, being 106 feet or about nine rooms long by 24 feet wide; at the western end an arm 42 feet long extends down the slope to the south. We

are indebted to Mrs. Nelson for a section of the noticeable refuse heap in front of this building.

Site 122. A small side canyon heads toward the northeast from this ravine about half a mile east of Vogt's house. Three ruins lie along its western slope facing east or southeast. The first ruin is of regular construction, 75 feet long by 35 feet wide with two arms of a room or two each at both ends.

Site 123. About two hundred feet east of Site 122 is another single building constructed of sandstone. It is about six rooms long and 18 or 20 feet wide. Some sherds show here.

Site 124. The last ruin up this side canyon lies on the hill slope but near its base. It is L-shaped, the two arms each about 30 feet long, but without a room in the outside corner where they join. While the ruin is apparently regular in shape its character cannot be certainly ascertained without excavation. One room dug into shows a good wall of selected and probably partly dressed sandstone blocks, more or less even in size, with some chinking. Part of a stone ring, diameters 15 and 30 inches, similar to that found at Site 120, was lying nearby.

Site 125. Turning south into Josepina Canyon for half a mile, a small cliff house¹ is seen on the left. On an upper rock ledge is a building of a few rooms. Another building lies at the base of the escarpment on the talus slope immediately below this: it contains four or five rooms at most. One room excavated to a depth of 4 feet gave dimensions of 7 feet 10 inches by 12 feet, with good walls of stone set in mud plaster. Here manos, metates, a grooved maul, corncobs, turkey bones, and potsherds were found. A small house of three or four rooms lay on the valley floor just below. All the buildings are evidently of the same age.

Sites 126-137. Beginning across the ravine from Vogt's house and extending along the south side of the ravine and the west side of Josepina Canyon for almost two miles is a series of thirteen ruins. Three others lie still further east on the north side of the pass to Cebollita. These are all small ruins, probably all of about the same age.

Site 138. A composite ruin lies about three and a half miles southeast of Ramah at a place called "Cebollita" in the pass between Josepina Canyon and the broad valley at the foot of the Zuñi Mountains. The ruin lies on a low sandy knoll rising from fertile meadows. The western section is nearly square (375 by 350 feet), the eastern is octagonal or possibly nine-sided, i. e., nearly circular (180 feet diameter) and between them there appears to be a connecting ruin partly covered by sand and possibly by

¹ Fewkes, (a), 116.

village débris (Fig. 5f). The circular section stands higher than the rectangular portion and appears to be a later construction.¹ A large dam was formerly thrown across the swale here.

Site 139 — Pueblo de los Muertos. This ruin is situated five miles north of east of Cebollita and eight miles due east of Ramah. It lies on the eastern bank of a living stream flowing from the foothills of the Zuñi Mountains and just below the notch in that range. The stream is distinctly marked by a long line of oak trees. This is a large rectangular pueblo built on the level ground on the bank of the stream. It is approximately 260 feet square (Fig. 4d); the buildings being two to five or more rooms wide; evidently highest on the outside and sloping toward the court. At certain points the building appears to have been higher than elsewhere. It is built of slabs and blocks of sandstone partly dressed by pecking (?). Rooms are 6 feet by 5 feet 8 inches and 6 feet 8 inches square. Some structures in the court appear to be separate from the outer buildings. The existence of kivas is uncertain although there are suggestive depressions in the court. Refuse piles thrown up at various points on the ruin would indicate that it was occupied for some time, but a section in a refuse pile outside to the southeast reached the original surface at a depth of only 1 foot 6 inches. While potsherds are rather scarce about the ruin, broken stone axes, hammerstones, sandstone and basalt manos and metates, and chert arrow points were seen.

Site 140 — Cienega. On the road from Ramah to Tinaja lies the pueblo ruin called "Cienega." It is five miles north of Inscription Rock, in line with the notches in the Zuñi Range; its location marked by a corral and sand dunes. The ruin is built of lava blocks and some sandstone around an irregular court and measures roughly 450 by 350 feet over all. There is some evidence that in its shape it conforms to natural features, nevertheless it approximates an oval in plan. In the southwest corner of the court is a deep water-hole fed by a spring and confined by a low wall 50 feet in diameter. A large block of basalt is set up in the court southwest of the water-hole. Sandstone manos, flint, and obsidian were seen. Ash heaps are an uncertain quantity due to the shifting dunes of sand. However, a section was made in the refuse on the west side of the court to the original level at a depth of 7 feet below the present surface and another was made similarly to a depth of 3 feet 6 inches outside the ruin to the south.

Site 141. About two hundred yards southwest of Site 140 is another

¹ Fewkes, (a), 114-116, as Pipkin's Ruin. A number of Dr. Fewkes's measurements differ considerably from our own. Evidently an error in his notes, giving the diameter of the circular ruin as "thirty feet" led him to suggest its possible use as a kiva: 'a kiva of 180 feet diameter is of course out of the question.

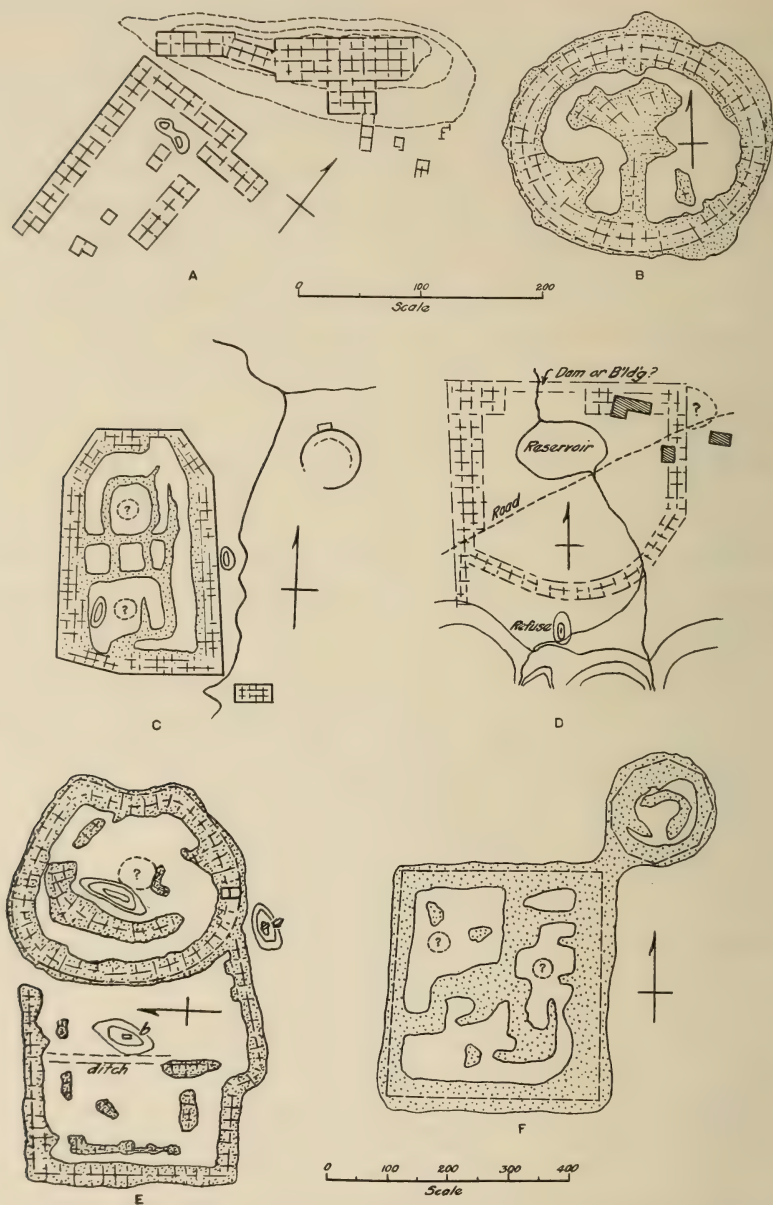


Fig. 5. Plans of Ruins: Ramah and Plateau Districts. a, Ruin 144; b, Ruin 162; c, Ruin 97; d, Ruin 153; e, Ruin 161; f, Ruin 138.

ruin, roughly oval in outline (Fig. 4g) about 245 by 290 feet. It is less prominent than the preceding ruin, its reduction being due to age or possibly to artificial causes. The main house section appears to have been on the north side, for there are traces of walls over that half of the court and on the east and west sides, but for a space on the south side there is only one row of rooms. One room was opened to the adobe (?) floor at a depth of about 4 feet: the walls were of good type and a fireplace was found against the north wall near the northwest corner. In the room were hammerstones, animal bones, and cooking pottery. Sherds are comparatively scarce on the ruin. There is some slight trace of refuse on the east side.

Mr. Gore, of Ramah, saw two small ruins of about six rooms each in the valley south of Cienega. Sherds were also noticed about half a mile to the west.

Site 142. A Mexican herder made a positive statement that there was a medium-sized ruin located about "one and a half miles" northeast of Cienega: but Mr. Nelson could not find it. The site should be in the next draw or valley east of the Pueblo de los Muertos Valley.

Site 143. Thirteen miles south of east of Ramah is the Mexican settlement Tinaja on the ranch of Mr. Leopoldo Mazón. The remains of a ruin are situated on a slight knoll by the chapel and cemetery about one-quarter mile west of the ranch house. The place has been built on by Mexicans, stones having been removed from the ruin, and it is consequently partly covered up and obscured. However, part of the ruin appears at the north end of the knoll near the chapel and another part appears at the south end near the reservoirs. While the location seems excellent so far as can be judged, the pueblo was not extensive. Few potsherds were found.

Site 144. About a mile and a half southeast of the ranch house and immediately south of the Agua Fria road is a low rock rising from the sandy flat valley bottom. The knoll or rock is about 35 feet high, about 250 feet long and perhaps 75 feet wide, dropping precipitously on the west but sloping to the east. Ruins lie partly on top of the rock and also below to the east and to the southeast (Fig. 5a). The building on the rock is 100 feet long and the largest below has two arms 180 feet and 100 feet long. These are built of sandstone laid in mud. Rooms measure about 7 by 9 feet, 7 by 10 feet, etc.

Site 145. Two small ruins are said to lie near the sandstone pinnacles, "Gigantes", six miles southeast of Ramah.

Site 146 — Gigantes. There is a ruin named for the pinnacles on the mesa a mile southeast, i. e., three miles northwest of Inscription Rock. This mesa is divided by a deep canyon heading into it from the west and leaving only a thin sheer wall of sandstone at its eastern face. Resting against the

inner or western face of this thin wall is a high conical talus slope on top of which is perched a ruin of irregular shape measuring roughly 170 by 125 feet. The sandstone wall is pierced at the level of the ruin by a "window," which one hundred feet or more above the base of the cliff on its eastern face, affords a magnificent view of the broad valley along the foot of the Zuñi Range. With adequate food and water the site could not be bettered from the standpoint of defense. An excavated room measured about 4 feet 6 inches by 8 feet: the well-laid walls of sandstone in adobe stood 7 to 8 feet high. Refuse extending down the slope into the canyon to the west gave a section 4 feet deep.

Site 147. Two small ruins lie at the southern corner of the mesa and there is possibly another on the valley floor immediately below these.

Site 148 — Inscription Rock. Ten miles southeast of Ramah, Inscription Rock, or El Morro, rises sheer from the plain. The famous inscriptions are at the base of the northeast angle and immediately above on the mesa top are three ruins. Two are large and prominent and have been previously visited and described.¹ Close to the northern edge of the mesa is a rectangular ruin, measuring roughly 160 by 100 feet. The back (north) wall of squared, even, large blocks of sandstone stands 6 feet high. The north, east, and west sides are two or three rooms wide, with the outer row of rooms highest.

Site 149. Just south of this ruin a deep and narrow gorge enters the rock from the west dividing it almost in two. On the opposite, or southern, side of the gorge is the larger of the two ruins, measuring about 300 by 210 feet. This ruin presents the general outline of two concentric rectangles. The "outer" building is but two rooms wide, and a deep trough extends along all but the southern side between the "outer" and "inner" buildings. A small section was made in the ash heap southeast of the ruin.

Site 150. The third ruin eluded the scrutiny of all previous investigators, and was discovered by Mrs. Nelson only after our outfit had left the vicinity of the rock. It lies to the west of the northern rectangular ruin. It is extensive and low, and seems to be more ancient than the other two.

Site 151. Inscription Rock rises sheer from the plain on the north but slopes gradually down to the south and west. Along the east side are half a dozen small ruins extending for perhaps two miles.

Site 152. A mile or more east are two more small ruins near an abandoned ranch house.

Site 153. Ojo Pueblo is roughly fifteen miles or more due south of

¹ Simpson, (a), 120 and Plate 63; Whipple, I, 64, and III, 22; Möllhausen, 74; Bandler, (b), 328; Fewkes, (a), 117.

Ramah and about six miles southeast of the corner of the National Forest. Here is a large ruin seen by Mr. Nelson. It is D-shaped, roughly 400 by 350 feet, situated in the mouth of a draw on the south side of the main valley, the north side of the building being on the edge of the bottom land (Fig. 5d). The ruin as a whole is low and overgrown with weeds. The walls stand from 1 to 4 feet high, and while not much of it is exposed, the masonry appears to be fairly well made of good-sized undressed sandstone blocks laid in mud. Several modern structures stand on the ruin. Very little refuse shows, only a few bits of pottery on the surface.

Site 154. About three-quarters of a mile southeast of Shoemaker's ranch house (three miles or so west of Ojo Pueblo) is a narrow rocky ridge formed by a saddle in a mesa. Here at the western end in the timber is a large ruin with standing walls. The ruin is roughly rectangular, about 225 by 150 feet (Fig. 4 f). It is built of sandstone blocks; those in the upper part of the outer wall are partly dressed on the face and seemingly squared by strokes of a stone chisel (?). The outer wall is practically of double thickness, more than two feet through, but the two walls are not very well bound together. Mr. Nelson's notes add that there are a few doors partly intact, with lintels of split rails. Rooms average 6 by 15 feet or more. Trees now stand on the ruin. A collection of sherds was made here.

Site 155. West of this ruin are two smaller ruins. They are built of stone, but are now shapeless heaps. The pottery is apparently older than that of the larger ruin, with a smaller percentage of redware.

Site 156. Three small ruins lie near the Shoemaker ranch house (Township 8, Range 16, Section 4). Another and larger lies on top of a small rocky mesa back of the house. It is really a fortification, perhaps 100 by 150 feet, on the talus and two terraces above.

Site 157. A group of seven or more small ruins lies along the canyon at Ojo Hallado, somewhere about four miles west of the Shoemaker ranch. They are all within a mile radius of the Garcia ranch, the buildings of which occupy one of sites. Of the two nearest the Garcia house, one is 50 by 25 feet, the other L-shaped, 35 by 25 feet, with two curious embankments projecting from it suggesting a dam.

Site 158. Two small ruins are situated three miles northwest of Ojo Hallado on the road to the ranch of Jesus Deracho. One at the foot of the mesa was seen; the other on top is located by report only.

Site 159. About three miles north of Ojo Hallado is the Miller ranch fifteen miles by road south of Ramah. Fully a dozen small ruins are scattered along the valley for a mile or two north and south of the ranch house and on the ridge above. They appear to be all of about the same age, though with a little range, but neither of the earliest nor latest periods. The

majority are six to ten room buildings; straight, L, and bracket-shaped: usually facing in a southerly direction. One on top of the ridge behind the Miller house is L-shaped, about 240 feet by 60; the long arm is only one or two rooms wide; the short arm is four rooms wide.

Site 160. Two miles northeast of the ranch house are three small ruins on the ridge. Two lie near a spring draining into Soldado Canyon. All are built of stone and lichen-covered. Potsherds are scarce.

Site 161. Crossing this ridge northwest of the Miller ranch, one descends after traveling about three miles into Soldado Canyon. This is an extension of the deep Horsehead Canyon penetrating far southward into the plateau from the main Zuñi Valley. Near the head of the canyon stands a large composite ruin¹; its juxtaposition of rectangular and circular pueblos resembling that at Cebollita near Ramah. The rectangular portion is roughly 350 feet or more square; the circular about 325 feet in diameter (Fig. 5e). Part of the outer wall of the circular ruin still stands. Like the other walls it is built of sandstone laid in mud, and above the height of four or five feet the blocks are partly dressed. The encircling houses are one or two and possibly three rooms wide. The outer wall is 2 feet 3 inches thick in its basal part, and 1 foot 2 inches in the upper portion; the middle wall measures 1 foot 6 inches and the inner wall 1 foot 4 inches. Refuse heaps from one to four feet high, occur both inside and outside of the courts. Sherds were taken from a section inside the rectangular court (161-b) and from another outside near the circular ruin (161-a).

Site 162. More than a mile down Soldado Canyon is another pueblo ruin placed on a low spur on the south side of the valley and opposite a small side canyon. It is said to lie exactly on the Zuñi Reservation line. It is oval with diameters of 210 and 180 feet (Fig. 5b). The ruin has fine standing walls and is in a better condition of preservation than any other ruin in the region despite acts of vandalism said to have been committed by a former Indian agent. It is built of sandstone laid in mud, with some chinking. The outer wall of large rectangular blocks, partly dressed, stands 5 to 10 feet high. It was formerly two, and possibly three, stories high. This wall presents no sharp angles, yet it is not quite a smooth curve. The pueblo is more compact than the similar structure in the composite ruin further up the canyon. Some irregular buildings stand in the court with

¹ Fewkes, (a), 119-126, describes this ruin and Site 162 under the name *Ar-che-o-tek-o-pa*. It should be noted that this is not a correct designation for the canyon in which the ruin stands, since *Atciatekyapoa* (*atci* = E, knife and *tekyapoa*, hill) is the Zuñi name for that section of the Zuñi plateau forming the eastern side of Horsehead Canyon. Dr. Fewkes identifies this ruin and that a mile north with the "Marata" of Castañeda's report, although his reason for so doing is not stated. The pottery from this ruin is not of historic type. The assumption that both parts of the ruin were occupied simultaneously will be considered later.

some of the walls apparently on radial lines. No refuse heaps of any account were found although there is débris here and there in the court.

Site 163. Somewhere to the west after following the road from Jesus ranch toward Zuñi for about eight miles we came on several small ruins near a reservoir and Zuñi farmhouse. These must lie near the Zuñi Reservation line. Possibly they are the ruins called *Tekyapoa* (hill). A collection of sherds was taken at random from that nearest the reservoir.

Site 164 — Cuminnkya. This ruin, or rather group of ruins, lies at the head of a valley seven or more miles southeast of Ojo Caliente. The Zuñi Buttes can be distinctly seen from this point bearing about N-15°-W from this place. The houses are scattered over an irregular ridge. They are all small; one L-shaped, measures 55 by 30 feet. A random collection of sherds was made here.

A circular ruin is said to lie a mile to the south close under a big red mesa.

Site 165. Two house ruins of one or two rooms each lie at the foot of a low mesa in the fork of the arroyos in the valley about three miles southwest of Cuminnkya. A random collection was made.

Site 166. Half a mile or so down the valley and the same distance up the slope to the north is a low small ruin. Only two rooms show; the whole measuring 25 by 10 feet. The stone has been carried away to the ranch house of Francisco Utima nearby. All sherds seen were picked up.

There are said to be other small ruins down the valley near the Garcia ranch.

Site 167. Half a mile up the slope from the last site is another on the summit. The ruin is a small place of only a few rooms. A random collection of sherds was made here.

POTSHERD SAMPLES.

It cannot be doubted that the pottery art in the Southwest has run a long and varied course. It is an art with a wealth of details and to the extent to which nice discriminations in technique can be made, equally fine discriminations can be made in its fluctuating phases. It would be fatuous to emphasize here the importance of pottery for establishing a chronology of Southwestern ruins. But if we know the history of the pottery art, though only in its barest outlines, we know at once the time-relations between the ruins. Simply to state the sequence of their occupation is to tell in lowest terms of the migrations of their erstwhile occupants. Migration records are but little more than suggestive indications of former intertribal relations, and for just this reason seem to be the urgent need in preparing a background for ethnological study in the Southwest. In the present study we have confined our attention simply to this point.

Needless to say this type of study requires none of the intensive excavation necessary for the elaboration of the course of minor cultural events. It is amenable to methods possible to a reconnaissance survey. Inasmuch as several distinct methods had been indicated before the present study was undertaken, it seems advisable to discuss briefly their application to our problem.

Three methods were published almost simultaneously by Messrs. Kidder, Kroeber, and Nelson. They may be characterized respectively, as the hypothetical seriation of several pottery techniques, the hypothetical ranking of surface finds and the observation of concurrent variations, and stratigraphic observation of refuse heaps.

Dr. Kidder's method¹ rests on the association of four different wares with ruins of varying size and degree of obliteration, on their varying perfection of technique and design, and on the extent of their distribution. With great plausibility, he tentatively ranked the wares on the basis of the combination of these factors. While the results of such a procedure are always suggestive, the objections to it are obvious. And further, wherever such a method is applicable, the methods which follow are equally applicable and certainly more productive of valid results.

Dr. Kroeber's method is outlined in the earlier pages of this volume²

¹ Kidder, (a).

² Part I.

on the basis of his experience with collections of sherds taken from the surface of ruins in the vicinity of Zuñi. Dr. Kroeber found that two general types of pottery could be distinguished. Further that sherds from any particular ruin belonged to one class only. He was thus able to distinguish two groups of ruins corresponding to the two types. Their relation in time was clearly indicated when it was noted that one group included sites occupied according to historical records and native tradition in the sixteenth century. A further analysis of the general types into their constituents, distinguished on the basis of color, suggested the division of the two general periods into minor sub-periods. Ranking these sub-periods, or rather the data for the individual ruins, by the proportion of one of the constituents, a partial confirmation of the validity of the sequence was suggested by concurrent variations in the associated constituents. A fundamental objection to Dr. Kroeber's method could be based on the quality of the original data, which obviously depends entirely on the ability of the investigator to collect a sample of potsherds at random and not by selection.

Mr. Nelson's method of stratigraphic observations on refuse heaps¹ needs no extensive comment. It is patent that the refuse heaps of every ruin contain the superposed remnants of the successive pottery styles used there, and that starting at ruins of known historical provenience we are able to trace back the successive phases of the art. More specifically Mr. Nelson's contribution consists in demonstrating the practicability of obtaining samples of sherds at random from the successive levels of the heap, and by determining the proportions of the constituent wares at each level indicating the course of the pottery art. This method is strikingly direct and entirely eliminates the error of selection, but it is only applicable to refuse heaps of considerable depth.

Obviously the last method is the most advantageous, but its applicability to the Zuñi ruins was strictly limited by the shallowness of the refuse heaps at most of the ruins. Stratigraphic observations were possible at only five of the one hundred ruins on the Zuñi Reservation,² for example. This is in itself a fact of some significance, for the necessary deduction is that the occupation of the ruins, large and small, was transitory. Fortunately, we were able to obtain good evidence connecting the pottery of Zuñi itself with Mattsakya, an historic pueblo, and Pinnawa, a prehistoric ruin, in each of which deep refuse deposits were found. For the rest Dr. Kroeber's method alone was applicable. We have therefore been forced to combine both methods in the present inquiry giving preference wherever

¹ Nelson.

² Five other ruins would probably have yielded results.

possible to the stratigraphic results. Our method of utilizing such results will be discussed after reviewing the data obtained.

It seems pertinent to inquire into the accuracy of the data obtained by the two methods. We may formulate the following questions: To what extent does a series obtained from a refuse heap represent the true sequence of types? Can we obtain a random sample of sherds by collecting from the surface of a ruin? To this end we excavated two independent sections in the refuse heaps along the eastern slope of Mattsakya, Site 48 (a ruin chosen, of course, at random). How closely these agree may be seen by inspecting the table below (p. 258). The agreement between the sections seems to be as close as may reasonably be expected, the magnitude of the deviations being relatively small and well within the range of accidental variation. This point comes out more emphatically by comparing each series with the mean series (p. 278), when it will be seen that the deviations of each series from the average have a random distribution, there being no preponderance of values on one side of the average or the other. To put the second question to the test, we compared a surface sample supposedly collected at random with a truly random sample obtained immediately below the surface. Thus, we have compared the surface sample obtained at Mattsakya by Dr. Kroeber in 1915 with the sherds from the first level obtained by the writer (p. 278). We have of necessity ignored the fact that the two samples may not be coeval, but the difference in time is probably slight.¹ The correspondence between the samples is quite close, and as in the case of the compared sections the differences are evidently accidental. In fact the differences are well within the range of variation exhibited by any two corresponding random samples in the series. A fairer test of this point would be the comparison of two samples made independently by one collector on the surface of a single ruin. We made such a test at least twice while in the field, but as the results are not at hand, we can simply state that the correspondences were similar to that above.

Pottery was obtained at most of the ruins seen. For the most part only fragments were available as no extensive excavations were made. While the absence of many complete vessels from our collection sets a definite limit on the description of the pottery wares, the preceding statements must have made it clear that this fact has but little influence on an inquiry into the sequence of the wares. Still it may be claimed that the lack of whole vessels would make an analysis of a sample of sherds into its constituent wares impossible; yet anyone who has handled material of this

¹ The reader must be cautioned that such a comparison of samples obtained by different investigators does not include the differences due to personal bias since one of the samples is certainly a random collection.

sort will readily recognize that this objection is chiefly academic. It is simply a matter of experience that the variety of wares at a ruin is very limited and that sherds may be recognized without much difficulty. Indeed the fact that we have in the Zuñi region close parallels to the wares of the Tano, as determined by Nelson, rendered the segregation into classes conspicuously easy.

This brings us to a description of the chief classes into which these wares have been divided. We feel justified in abandoning Dr. Kroeber's twofold classification, for as he himself asserts, the very fact that subdivision is possible indicates that there has been "a steady continuous development on the soil." More particularly, we feel the necessity of abandoning the principle of classifying each sherd on the basis of its particular color in favor of a classification according to the several distinct wares. Surely such a classification more adequately represents the facts. However, the essential correctness of Dr. Kroeber's results cannot be doubted. The explanation for the close agreement between the results from the two methods lies simply in the small number of techniques and color combinations involved.

We have made our general classification of wares conform to those worked out by Nelson for the Tano region¹ in order to render the results directly comparable. This has been made possible, as we have already intimated, by the very close parallelism in development in the two regions. There can be very little doubt that the sequence of techniques in the Zuñi Region has been painted ware, glazed ware, combination glazed and painted ware, and finally painted ware of a distinctly modern type. On the other hand, the color combinations are somewhat simpler, for we find only three ground or body colors in use, white, red, and buff. In addition to these wares with painted decoration, we find two other types, corrugated ware and a coarse, plain, unsized, undecorated black ware. We have therefore divided the wares first on the basis of technique and secondarily on the basis of body or ground color.

In the following table we have indicated the proportions of the various wares present at each site by percentages. In the first column is the number designating the ruin in the list above, and the depths of the samples wherever stratigraphic sections were made. In the second to fifteenth columns the percentages of corrugated, black and painted wares are indicated, and in the last column the number of sherds in the sample analyzed.

¹ Nelson.

[illegible]

¹ This figure represents the proportion of sherds bearing corrugations, but inasmuch as the body of the vessel was not corrugated, it does not represent the proportion of corrugated ware present. No method of determining that proportion occurs to us.

² Our recollection is that a few red sherds were seen at this ruin, but were by accident not included in this sample.

TABLE I — (Continued).

Site	Corru- gated	Black	Two Color Painted Ware			Three Color Painted Ware			Two Color Glazed Ware			Three Color Glazed and Painted Ware			Size of Sample
			White	Red	Buff	White	Red	Buff	White	Red	Buff	White	Red	Buff	
92	43	.....	35	20	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	93
95	60	.....	25	12	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	116
96	50	.....	20	26	.....	.....	4	.....	.....	.....	.....	.....	.....	.....	136
97	38	.....	31	23	.....	.....	8	.....	.....	.....	.....	.....	.....	.....	13
	8	(6) 2'0"-2'6"	8	50	.....	.....	34	.....	.....	.....	.....	.....	.....	.....	12
	44	(5) 1'6"-2'0"	21	13	.....	.....	19	.....	.....	.....	.....	.....	.....	.....	34
	41	(4) 1'0"-1'6"	31	13	.....	.....	13	.....	3	.....	.....	.....	.....	.....	39
	46	(3) 0'6"-1'0"	23	8	.....	.....	20	.....	.....	.....	.....	.....	2	.....	39
	67	(2) 0"-0'6"	17	8	.....	.....	8	.....	.....	.....	.....	.....	3	.....	12
104	88	(13) 6'0" to 7'-0"	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8
	65	(12) 5'-6" to 6'-0"	8	19	.....	.....	8	.....	.....	.....	.....	.....	.....	.....	26
	84	(11) 5'-0" to 5'-6"	5	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	19
	61	(10) 4'6" to 5'-0"	22	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	36
	63	(9) 4'-0" to 4'-6"	16	14	.....	.....	7	.....	.....	.....	.....	.....	6	.....	49
	59	(8) 3'-6" to 4'-0"	14	9	.....	.....	9	.....	.....	.....	.....	.....	.....	.....	81
	55	(7) 3'-0" to 3'-6"	24	13	.....	.....	5	.....	2	2	.....	.....	5	.....	38
	41	(6) 2'-6" to 3'-0"	16 ^a	20	.....	.....	14	.....	.....	3	.....	.....	9	.....	86
	50	(5) 2'-0" to 2'-6"	13	16	.....	.....	12	.....	.....	3	.....	.....	6	.....	32
	49	(4) 1'-6" to 2'-0"	19	17	.....	.....	10	.....	.....	5	.....	.....	.....	.....	41
	55	(3) 1'-0" to 1'-6"	14	23	.....	.....	6	.....	.....	.....	.....	.....	.....	.....	49
	60	(2) 6" to 1'-0"	7	20	.....	.....	10	.....	.....	.....	.....	.....	2	.....	66
121	70	(1) 0" to 6"	10	5	.....	.....	15	.....	.....	.....	.....	.....	3	.....	20
	63	(4) 1'-6" to 2'-0"	12	13	.....	.....	12	.....	.....	.....	.....	.....	.....	.....	59
	52	(3) 1'-0" to 1'-6"	18	11	.....	.....	15	.....	.....	.....	.....	.....	.....	.....	27
	53	(2) 6" to 1'-0"	14	12	.....	.....	20	.....	.....	.....	.....	.....	4	.....	76
	30	(1) 0" to 6"	14	12	.....	.....	16	.....	.....	.....	.....	.....	1	.....	69
139		(4) 1'0"-1'6"	12	32	.....	.....	.....	.....	.....	7	.....	.....	3	.....	69

139	(3) 6'-1'0"	32	11	41	7	9	12	17	24	31	38	45	52	59	66	73	80	87	94	101	108	115	122	129	136	143	150	157	164	171	178	185	192	199	206	213	220	227	234	241	248	255	262	269	276	283	290	297	304	311	318	325	332	339	346	353	360	367	374	381	388	395	402	409	416	423	430	437	444	451	458	465	472	479	486	493	500	507	514	521	528	535	542	549	556	563	570	577	584	591	598	605	612	619	626	633	640	647	654	661	668	675	682	689	696	703	710	717	724	731	738	745	752	759	766	773	780	787	794	801	808	815	822	829	836	843	850	857	864	871	878	885	892	899	906	913	920	927	934	941	948	955	962	969	976	983	990	997	1004	1011	1018	1025	1032	1039	1046	1053	1060	1067	1074	1081	1088	1095	1102	1109	1116	1123	1130	1137	1144	1151	1158	1165	1172	1179	1186	1193	1200	1207	1214	1221	1228	1235	1242	1249	1256	1263	1270	1277	1284	1291	1298	1305	1312	1319	1326	1333	1340	1347	1354	1361	1368	1375	1382	1389	1396	1403	1410	1417	1424	1431	1438	1445	1452	1459	1466	1473	1480	1487	1494	1501	1508	1515	1522	1529	1536	1543	1550	1557	1564	1571	1578	1585	1592	1599	1606	1613	1620	1627	1634	1641	1648	1655	1662	1669	1676	1683	1690	1697	1704	1711	1718	1725	1732	1739	1746	1753	1760	1767	1774	1781	1788	1795	1802	1809	1816	1823	1830	1837	1844	1851	1858	1865	1872	1879	1886	1893	1900	1907	1914	1921	1928	1935	1942	1949	1956	1963	1970	1977	1984	1991	1998	2005	2012	2019	2026	2033	2040	2047	2054	2061	2068	2075	2082	2089	2096	2103	2110	2117	2124	2131	2138	2145	2152	2159	2166	2173	2180	2187	2194	2201	2208	2215	2222	2229	2236	2243	2250	2257	2264	2271	2278	2285	2292	2299	2306	2313	2320	2327	2334	2341	2348	2355	2362	2369	2376	2383	2390	2397	2404	2411	2418	2425	2432	2439	2446	2453	2460	2467	2474	2481	2488	2495	2502	2509	2516	2523	2530	2537	2544	2551	2558	2565	2572	2579	2586	2593	2600	2607	2614	2621	2628	2635	2642	2649	2656	2663	2670	2677	2684	2691	2698	2705	2712	2719	2726	2733	2740	2747	2754	2761	2768	2775	2782	2789	2796	2803	2810	2817	2824	2831	2838	2845	2852	2859	2866	2873	2880	2887	2894	2901	2908	2915	2922	2929	2936	2943	2950	2957	2964	2971	2978	2985	2992	2999	3006	3013	3020	3027	3034	3041	3048	3055	3062	3069	3076	3083	3090	3097	3104	3111	3118	3125	3132	3139	3146	3153	3160	3167	3174	3181	3188	3195	3202	3209	3216	3223	3230	3237	3244	3251	3258	3265	3272	3279	3286	3293	3300	3307	3314	3321	3328	3335	3342	3349	3356	3363	3370	3377	3384	3391	3398	3405	3412	3419	3426	3433	3440	3447	3454	3461	3468	3475	3482	3489	3496	3503	3510	3517	3524	3531	3538	3545	3552	3559	3566	3573	3580	3587	3594	3601	3608	3615	3622	3629	3636	3643	3650	3657	3664	3671	3678	3685	3692	3699	3706	3713	3720	3727	3734	3741	3748	3755	3762	3769	3776	3783	3790	3797	3804	3811	3818	3825	3832	3839	3846	3853	3860	3867	3874	3881	3888	3895	3902	3909	3916	3923	3930	3937	3944	3951	3958	3965	3972	3979	3986	3993	4000	4007	4014	4021	4028	4035	4042	4049	4056	4063	4070	4077	4084	4091	4098	4105	4112	4119	4126	4133	4140	4147	4154	4161	4168	4175	4182	4189	4196	4203	4210	4217	4224	4231	4238	4245	4252	4259	4266	4273	4280	4287	4294	4301	4308	4315	4322	4329	4336	4343	4350	4357	4364	4371	4378	4385	4392	4399	4406	4413	4420	4427	4434	4441	4448	4455	4462	4469	4476	4483	4490	4497	4504	4511	4518	4525	4532	4539	4546	4553	4560	4567	4574	4581	4588	4595	4602	4609	4616	4623	4630	4637	4644	4651	4658	4665	4672	4679	4686	4693	4700	4707	4714	4721	4728	4735	4742	4749	4756	4763	4770	4777	4784	4791	4798	4805	4812	4819	4826	4833	4840	4847	4854	4861	4868	4875	4882	4889	4896	4903	4910	4917	4924	4931	4938	4945	4952	4959	4966	4973	4980	4987	4994	5001	5008	5015	5022	5029	5036	5043	5050	5057	5064	5071	5078	5085	5092	5099	5106	5113	5120	5127	5134	5141	5148	5155	5162	5169	5176	5183	5190	5197	5204	5211	5218	5225	5232	5239	5246	5253	5260	5267	5274	5281	5288	5295	5302	5309	5316	5323	5330	5337	5344	5351	5358	5365	5372	5379	5386	5393	5400	5407	5414	5421	5428	5435	5442	5449	5456	5463	5470	5477	5484	5491	5498	5505	5512	5519	5526	5533	5540	5547	5554	5561	5568	5575	5582	5589	5596	5603	5610	5617	5624	5631	5638	5645	5652	5659	5666	5673	5680	5687	5694	5701	5708	5715	5722	5729	5736	5743	5750	5757	5764	5771	5778	5785	5792	5799	5806	5813	5820	5827	5834	5841	5848	5855	5862	5869	5876	5883	5890	5897	5904	5911	5918	5925	5932	5939	5946	5953	5960	5967	5974	5981	5988	5995	6002	6009	6016	6023	6030	6037	6044	6051	6058	6065	6072	6079	6086	6093	6100	6107	6114	6121	6128	6135	6142	6149	6156	6163	6170	6177	6184	6191	6198	6205	6212	6219	6226	6233	6240	6247	6254	6261	6268	6275	6282	6289	6296	6303	6310	6317	6324	6331	6338	6345	6352	6359	6366	6373	6380	6387	6394	6401	6408	6415	6422	6429	6436	6443	6450	6457	6464	6471	6478	6485	6492	6499	6506	6513	6520	6527	6534	6541	6548	6555	6562	6569	6576	6583	6590	6597	6604	6611	6618	6625	6632	6639	6646	6653	6660	6667	6674	6681	6688	6695	6702	6709	6716	6723	6730	6737	6744	6751	6758	6765	6772	6779	6786	6793	6800	6807	6814	6821	6828	6835	6842	6849	6856	6863	6870	6877	6884	6891	6898	6905	6912	6919	6926	6933	6940	6947	6954	6961	6968	6975	6982	6989	6996	7003	7010	7017	7024	7031	7038	7045	7052	7059	7066	7073	7080	7087	7094	7101	7108	7115	7122	7129	7136	7143	7150	7157	7164	7171	7178	7185	7192	7199	7206	7213	7220	7227	7234	7241	7248	7255	7262	7269	7276	7283	7290	7297	7304	7311	7318	7325	7332	7339	7346	7353	7360	7367	7374	7381	7388	7395	7402	7409	7416	7423	7430	7437	7444	7451	7458	7465	7472	7479	7486	7493	7500	7507	7514	7521	7528	7535	7542	7549	7556	7563	7570	7577	7584	7591	7598	7605	7612	7619	7626	7633	7640	7647	7654	7661	7668	7675	7682	7689	7696	7703	7710	7717	7724	7731	7738	7745	7752	7759	7766	7773	7780	7787	7794	7801	7808	7815	7822	7829	7836	7843	7850	7857	7864	7871	7878	7885	7892	7899	7906	7913	7920	7927	7934	7941	7948	7955	7962	7969	7976	7983	7990	7997	8004	8011	8018	8025	8032	8039	8046	8053	8060	8067	8074	8081	8088	8095	8102	8109	8116	8123	8130	8137	8144	8151	8158	8165	8172	8179	8186	8193	8200	8207	8214	8221	8228	8235	8242	8249	8256	8263	8270	8277	8284	8291	8298	8305	8312	8319	8326	8333	8340	8347	8354	8361	8368	8375	8382	8389	8396	8403	8410	8417	8424	8431	8438	8445	8452	8459	8466	8473	8480	8487	8494	8501	8508	8515	8522	8529	8536	8543	8550	8557	8564	8571	8578	8585	8592	8599	8606	8613	8620	8627	8634	8641	8648	8655	8662	8669	8676	8683	8690	8697	8704	8711	8718	8725	8732	8739	8746	8753	8760	8767	8774	8781	8788	8795	8802	8809	8816	8823	8830	8837	8844	8851	8858	8865	8872	8879	8886	8893	8900	8907	8914	8921	8928	8935	8942	8949	8956	8963	8970	8977	8984	8991	8998	9005	9012	9019	9026	9033	9040	9047	9054	9061	9068	9075	9082	9089	9096	9103	9110	9117	9124	9131	9138	9145	9152	9159	9166	9173	9180	9187	9194	9201	9208	9215	9222	9229	9236	9243	9250	9257	9264	9271	9278	9285	9292	9299	9306	9313	9320	9327	9334	9341	9348	9355	9362	9369	9376	9383	9390	9397	9404	9411	9418	9425	9432	9439	9446	9453	9460	9467	9474	9481	9488	9495	9502	9509	9516	9523	9530	9537	9544	9551	9558	9565	9572	9579	9586	9593	9600	9607</
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The data obtained from Zuñi Pueblo itself was not strictly amenable to the foregoing classification because of its paucity. Buildings had been extended over old refuse heaps and only superposed strata of sherds were found in former open spaces. These were sufficient to indicate conclusively a change in pottery types during the occupation of the pueblo. It seems preferable to tabulate merely the actual number of sherds found, and to classify the decorated wares as of the present-day type, the painted types of the pueblos abandoned in historic times, and the types with glazed decoration. These are indicated in Table II.

Similarly, certain recent ruins in the neighborhood of Zuñi contain painted wares closely related to present-day wares. It seems inadvisable to classify these with the wares from the majority of ruins, but rather to show their comparability with the wares from Zuñi itself. We have accordingly classified them in Table III as in Table II, but as the samples are sufficiently large, percentages are given.

TABLE II.
POTTERY FRAGMENTS FROM ZUÑI.

Location		Corru- gated	Black	Painted Wares		Glazed Wares
				Modern	Historic	
North Refuse Heap (V) ¹	(6) 5'-5'6"	.....	.....	7	.....	.....
	(5) 4'-5'	.....	8	7	2	.....
	(4) 3'-4'	.....	5	3	.....	.....
	(3) 2'-3'	.....	15	7	1	.....
	(2) 1'-2'	.....	7	5	2	.....
	(1) 0'-1'	.....	23	11	.....	.....
Entrance to Rat Plaza (MM)	(8) 7'-8'	.....	5	14	.....	.....
	(7) 6'-7'	.....	10	27	3	.....
	(6) 5'-6'	.....	16	15	1	.....
	(5) 4'-5'	.....	12	5	.....	.....
	(4) 3'-4'	.....	18	18	2	.....
	(3) 2'-3'	.....	12	7	.....	.....
	(2) 1'-2'	.....	9	4	.....	.....
	(1) 0'-1'	.....	8	9	.....	.....
Rat Plaza (LL)	(9) 9'-11'	.....	.....	2	.....	.....
	(7) 7'-8'	.....	8	21	7	3
	(6) 6'-7'	.....	18	22	.....	.....
	(5) 5'-6'	.....	17	20	.....	.....
	(4) 4'-5'	.....	7	7	.....	.....

¹ This letter refers to the location of the excavation as indicated on the plan of Zuñi by Kroeber, this volume, p. 202 and Map 6.

TABLE II—(Continued.)

Location		Corru- gated	Black	Painted Wares		Glazed Wares
				Modern	Historic	
Muhhewa (K)	(3) 3'-4'	.....	2	7	.....	.....
	(1) 0'-2'	.....	.....	8	.....	.....
	(16) 15'-15'6"	2	4	.....	4	1
	(15) 14'-15'	27	5	.....	20	3
	(14) 13'-14'	7	6	.....	9	2
	(13) 12'-13'	1	.....	.....	4	1
	(12) 11'-12'	2	15	5	12	4
	(11) 10'-11'	1	8	1	11	1
	(10) 9'-10'	.....	13	3	5	3
	(9) 8'-9'	1	14	8	6	2
	(8) 7'-8'	.....	1	11	1	.....
	(6) 5'-6'	.....	19	9	.....	.....
	(5) 4'-5'	.....	36	29	2	.....
	(4) 3'-4'	.....	38	17	.....	.....
	(2) 1'-2'	.....	21	3	.....	.....
	(1) 0'-1'	1	19	13	.....	.....
East of Room 105 (L)	(12) 11'-12'6"	.....	6	.....	6	1
	(11) 10'-11'	.....	22	.....	39	6
	(10) 9'-10'	1	45	1	29	6
	(9) 8'-9'	.....	27	.....	40	1
	(8) 7'-8'	1	7	3	1	1
	(7) 6'-7'	1	4	4	3	.....
	(6) 5'-6'	1	8	1	3	.....
	(5) 4'-5'	3	2	22	1	.....
	(4) 3'-4'	.....	2	15	.....	.....
	(3) 2'-3'	.....	5	8	1	.....
	(2) 1'-2'	1	3	1	.....	.....
	(1) 0'-1'	.....	.....	7	.....	.....
	(8) 7'-8'6"	.....	1	2	.....	.....
	(7) 6'-7'	.....	19	9	11	4
South Block (Q)	(6) 5'-6'	.....	24	36	8	10
	(5) 4'-5'	.....	38	37	3	2
	(4) 3'-4'	.....	14	12	1	.....
	(3) 2'-3'	.....	28	14	.....	.....
	(2) 1'-2'	3	4	8	.....	.....
	(1) 0'-1'	1	13	15	.....	.....

TABLE III.

PERCENTAGE OF POTTERY WARES PRESENT IN RECENT RUINS.

	Site	Corru- gated	Black	Painted Wares		Glazed Wares	Size of Sample
				Modern	Historic		
12	K'yatcekwa	1	50	.....	48 ¹	1	92
32	Hampassawa ²	6	33	26	26	9	204
42	Heccotal'alla	1	69	30	.....	.....	131
52	East Kolliwa	3	55	41	1	.....	115
	West Kolliwa	1	41	52	6	.....	81
53	Wimmayawa	2	66	31	2	.....	197

¹ Historic painted wares of late type.² This sample may represent a mixture of seventeenth century wares and modern wares. rather than a transitional stage.

SEQUENCE OF POTTERY TYPES.

ZUÑI PUEBLO.

Operations were commenced in Zuñi Pueblo itself; in its refuse heaps, its plazas, and the open spaces left by demolished buildings. In spite of the failure to locate an old refuse heap of any depth, evidences were found of changes in pottery type in superposed strata in the older sections of town. The best indications were found in the deep fill near Muhhewa, situated at the foot of the slope south of the main block. Here a marked difference was found (Table II) in the wares below eight feet as compared with those above. Corrugated ware, painted wares of the type prevalent on the surface of ruins abandoned in the early historic period, and glazed wares are in the lower levels, while modern painted wares are the prevailing type above. Parallel results were obtained at a point east of Room 105, at the foot of the southwestern slope of the main block, and again below the center of the south block, where the wash was demonstrably from the main block on the north. The line of demarkation in the two cases was at the depths four to seven feet and four feet, respectively. The overlapping of the modern painted wares with the earlier types seen here may be significant, but we cannot be certain of this, as we are dealing with washed deposits. Suffice it that these finds demonstrate conclusively that the oldest wares found in Zuñi are identical with those on the surface of ruined pueblos known to have been abandoned in early historic times.

Certain other ruins (Nos. 12, 32, 42, 52, and 53) proved to contain painted wares of a type almost identical with that of modern Zuñi (Table III). While they are referred to by the natives as ancient dwellings, they are, with the exception of No. 32, undoubtedly post-Conquest refuge villages.

HISTORICAL EVIDENCE.

The next step is to follow back the sequence of wares in the ruins of the historic pueblos. In view of the moot points left unsettled by the historiographers in establishing the identity of the historic pueblos, it seems worth while reviewing the documentary evidence in some detail. We may anticipate our results by stating that the historiographers were essentially correct in their positive identifications and that the identities established in doubt prove to be those with nonhistoric pueblos.

Documentary evidence first throws light on the Zuñi region in the second quarter of the sixteenth century. While it is possible that there was an earlier expedition in 1538 which advanced to the north as far as the Gila or the lower Colorado River,¹ the first report of an expedition penetrating to the Zuñi country is that of Fray Marcos de Nizza in the following year.

There can no longer be any doubt of the identity of the region which Marcos reached. Following Bandelier's closely argued identification of Fray Marcos' probable route² we may briefly describe his journey.

Instructed by Viceroy Mendoza to penetrate into the interior in order to observe and to report with particular care on the peoples and the country that he might find, Fray Marcos left San Miguel de Culiacan (Sinaloa) on March 7, 1539 (old style) guided by Estévan, the negro companion of Cabeza de Vaca. Moving northward he followed the coast of the Gulf of California as far as the Rio Yaqui in Sonora. Diverging from the coast his route then lay more directly north through central Sonora. Sending Estévan to precede him in his northerly march, Marcos received from that source his first report of a "very mighty Province" lying thirty days' journey before him. He was told that there were seven great cities in this province, the first of which was called Cibola (Cevola), and that there were also three other "kingdoms" called Marata, Acus, and Totontecac.

Continuing northward Marcos seems to have passed up the Rio Sonora and down the Rio San Pedro to the Gila. Here he met an aged native of Cibola who confirmed the earlier reports, adding,³

that the lord of those seven cities lives and resides in one of them called Ahacus. . . . He also said to me, that the other Seven⁴ Cities are like this one [Ahacus], and some of them larger, and that the principal one of all is Ahacus. He says that toward the southeast there is a kingdom called Marata, in which there used to be many and large settlements, all of which are of houses of stone and many-storied, and that this kingdom was and still is at war with the lord of the Seven Cities, through which warfare the kingdom of Marata has declined greatly, although it still holds its own, and is at war with the others. And he also stated that toward the southeast⁵ lies the kingdom called Totontecac. . . . He also said that there is another very large province and kingdom named Acus. There is also Ahacus, and that word, with aspiration, is the name of one of the Seven Cities, the largest of them all; and Acus, without aspiration, is a province by itself.

Crossing to the Salt River, Marcos entered the "desert"⁶ beyond which, so he was informed, Cibola lay fifteen days' journey before him.

¹ Bandelier, (a), 68-105.

² *Op. cit.*, 106-178; Hakluyt, 125-144.

³ Bandelier, (a), 145.

⁴ *Six* in Hakluyt, 136.

⁵ *West* in Hakluyt, 136. An error according to Bandelier, (a), 146, footnote.

⁶ "desoblado," a wilderness or uninhabited country, according to Bandelier.

Meanwhile Estévan, maintaining his lead, had arrived at the "mighty Province," for while still two or three days' journey from his goal Fray Marcos was informed by a returning Indian, one of those who had accompanied Estévan, that the negro and some of his companions had been killed by the Cibolans. Although this news was confirmed by others who escaped from Cibola, Marcos pushed on.

... I followed my road till we came in sight of Cibola which lies in a plain on the slope of a round height. Its appearance is very good for a settlement,—the handsomest I have ever seen in these parts. The houses are as the Indians told me, all of stone, with their stories and flat roofs. As far as I could see from a height where I placed myself to observe, the settlement is larger than the city of Mexico.¹

Taking formal possession of Cibola, Totontecac, Acus, and Marata, Fray Marcos turned about and hastened to Mexico with his report.

From this report we learn that at a distance north of Culiacan equivalent to that of Zuñi there were "seven cities" of Cibola, the chief of which was Ahacus. Three other pueblo groups were mentioned: Acus, Totontecac to the west, and Marata southeast of Cibola. Assuming that Cibola is the Zuñi country, Hodge² successfully demonstrates that Hawwikku was the first discovered pueblo and that in which Estévan was killed, and not Kyakkima, as Bandelier³ maintains.

With the intention of investigating Marcos's report, Mendoza sent Melchior Diaz to the north. Leaving in November, 1539, he penetrated one hundred leagues north of Culiacan before he was forced by the cold to turn back. Indians whom he encountered gave him a more detailed and less extravagant description of Cibola than that of Marcos. He was told that

there are seven places, being a short day's march from one to another, all of which are together called Cibola. . . . Of the seven settlements, they describe three of them as very large; four not so big. . . . Totontecac is declared to be seven short days from the province of Cibola. . . . They say that there are twelve villages. . . . They also tell me that there is a village which is one day from Cibola, and that the two are at war.⁴

Immediately upon the return of Diaz, Francisco Vazquez Coronado accompanied among others by Fray Marcos and Pedro de Castañeda, chronicler of the expedition, left Culiacan on April 22, 1540. Following much the same route as that of Fray Marcos's earlier journey, they reached Cibola and entered the first pueblo on July 7, 1540. The indications in

¹ Bandelier, (a), 161; Hakluyt, 142.

² Hodge, (a).

³ Bandelier, (a), 163-166.

⁴ Letter from Mendoza to the King, April 17, 1540, in Winship, 547-551. Winship suggests that this village is the "Marata" of Marcos.

Castañeda's account¹ that Cibola is Zuñi are numerous. Chief among these are the situations of the other "provinces" relative to Cibola which agree closely with those of the known inhabited pueblos — Rio Grande, Hopi, and Acoma — to Zuñi. Acus is identifiable with Acoma, and Toton-teac, or Tusayan of Castañeda's account, with the Hopi pueblos. Marata alone remains unidentified.

Describing Cibola, we are told that, "this country is a valley between rocky mountains."² It comprised seven villages, the largest of which was called Maçaque,³ and together with Tusayan had as many as three or four thousand men.⁴ Bandelier has satisfactorily shown that the first village entered by the Spaniards was Hawwikku.⁵ Jaramillo's statement differs as to the number of villages: —

In this province of Cibola there are five little villages. . . . These villages are about a league or more apart from each other, within a circuit of perhaps 6 leagues From this village of Cibola [Hawwikku] . . . we went to another of the same province, which was about a short day's journey off, on the way to Tiheux [Rio Grande]⁶

But according to the *Relación Postrera de Sívola*⁷ there were,

seven villages in this province of Cibola within a space of 5 leagues; the largest may have about 200 houses and two others about 200, and the others somewhere between 60 or 50 and 30 houses.

Of these Hawwikku had two hundred houses. Their size is given as from one hundred fifty to two hundred and three hundred houses in the *Relación del Suceso*.⁸

The next documentary evidence relating to the occupation of the Zuñi pueblos is contained in the reports on Chamuscado's expedition of 1581.⁹ Moving up the Rio Grande to Bernalillo, he penetrated to the west to the Zuñi Valley. At Cami¹⁰ he found six pueblos of thirty, forty, and even one hundred houses. Two years later Espejo found a province called Zuñi (or in a variant report, Amí), "and by another name Cibola," comprising

¹ Winship. The question of identity of Cibola has been discussed for half a century: among the contributors have been Gallatin, Squier, Whipple, Turner, Kern, Emory, Abert, Morgan, Simpson, Dellenbaugh, Bandelier, Hodge, and Winship.

² Winship, 518.

³ Op. cit., 517, 524.

⁴ Op. cit., 519. Compare Hodge, (b), 351, footnote.

⁵ Bandelier, (c), 29.

⁶ Winship, 586 et seq.

⁷ Op. cit., 569.

⁸ Winship, 573. Compare the statements of Mota-Padilla and Gomara in Bandelier, (c), 38.

⁹ Bandelier, (c), 62.

¹⁰ Bolton, 148. Cami or Sumi is identified with Zuñi in *Testimonio de la entrada que hizo Anton de Espejo*, Bandelier, (c), 63.

six pueblos, one of which was Aquico. Luxán gives the names of the Zuñi pueblos visited by the party as Malaque, Cuaquema, Agrisco, Oloná, Cuaquina, and Cana.¹ Espejo, whose estimates are usually exaggerated, put their population at more than twenty thousand.²

The testimony of the several reports of the Oñate expeditions is important for our survey and must be given in full. Marching westward from his settlement on the Río Grande in 1598, Oñate

rested one day [at Acoma], and on the next we set out for the province of Zuñi, going to the head of the river which is called De la Mala Nueva, next day four leagues, camping for the night in a forest, without water; next day to the Agua de la Peña, four leagues. . . . Next day four leagues to a spring which flows to the province of Cuni. We saw three ruined pueblos. The following day, which was the feast of All Saints, three leagues to the first pueblo of the people belonging to the province of Zuñi, which consists of six pueblos. . . . Remaining here one day, on Tuesday we went three leagues to visit the last pueblo, which they call Cibola, or by another name, Granada, where Francisco Vazquez Coronado nearly sixty years ago had the encounter with the Indians.³

Through Oñate we learn the names of the Zuñi pueblos for the first time. In the act of allegiance,⁴ executed at Agucobi,⁵ the six pueblos are called, "Agucobi, Canabi, Coaqueria,⁶ Halonagu, Macaqui, Aquinsa." The report of Oñate's second western expedition of 1604-5 yields some further information.

After having travelled towards the west sixty leagues, they arrived at the province of Cuni, which is in some plains more inhabited by hares and rabbits than by Indians. There are six pueblos; in all of them there are no more than three hundred terraced houses of many stories, like those of New Mexico [the Río Grande country]. The largest pueblo and head of all is the pueblo of Cibola,⁷ which in their language is called Havico. It has one hundred and ten houses."⁸

We are now in a position to sum up these early references to the Zuñi and their pueblos brought together by the labor of Bandelier, Winship, Hodge, and Bolton.

¹ Bolton, 184, footnote.

² Bandelier, (c), 64-74; Bolton, 184.

³ Bolton, 235; cf. Bandelier, (c), 81. We would suggest that Oñate's route was the same in 1604-5 when he passed Inscription Rock: eight leagues (about twenty-one miles) down the main Zuñi Valley from the forested Zuñi Mountains would bring him to the Pescado Springs, which flow to Zuñi.

⁴ "Obedience y Vasallaje á su Magestad por los Indios de la Provincia de Aguscobi", Nov. 9, 1598.

⁵ According to Bandelier, (c), 84.

⁶ The name "Coaqueria" does not appear in the Spanish text given by Bandelier, (c), 84, footnote, but is given by Bancroft, in Twitchell, (a), I, 323, footnote.

⁷ There is an incidental reference to "the pueblo of Cibola, which the natives call Cuni," Bolton, 239.

⁸ Bolton, 268.

There are first the references of the legendary type to the "seven cities" and "seven caves" to the north of Mexico. Bandelier has demonstrated that these are probably entirely mythical in character,¹ but even if they had a foundation in fact, there is nothing to show that they refer specifically to the Zuñi pueblos.

Second, there is the hearsay evidence of Fray Marcos de Nizza and Melchior Diaz. Marcos was told that to the north there were seven cities called collectively Cibola; that the first was called Cibola and the principal one Ahacus. Marcos saw this first city from a distance and from his description Hodge has plausibly identified its position with that of Hawwikku. Diaz, who received a seemingly faithful description, was told that Cibola comprised seven settlements.

Third, there is the testimony of the explorers of the Zuñi country, some of whom, however, evidently had only a superficial knowledge of Zuñi conditions. The number of villages reported in the documents of the Coronado expedition of 1540 varies: Castañeda and the *Relación Postrera de Sívola* report seven, Jaramillo but five. The most southwesterly village is again called Cibola and another Maçaque. In 1581 Chamuscado reports their number as six. Espejo reports six in 1583 called Malaque, Cuaquema, Agrisco, Oloná, Cuaquina, and Cana. Aquico is again mentioned as one of them. Oñate puts their number at six in 1598, enumerating in his official list, Aguicobi (or Aguscobi), Canabi, Coaqueria, Halonagu, Macaqui, and Aquinsa. Of these the most southwesterly is called Cibola and Havico, and midway between this pueblo and Pescado Springs lies the most north-eastern village. Of all these Oñate's list has probably the greatest evidential value.

This seems a convenient point to inquire into the identity of the pueblos occupied during the sixteenth century.

There does not seem to be any certain evidence that the Zuñi villages numbered seven in 1540 and that one was abandoned before 1581-98.² Even the most ambitious attempts to identify the pueblos do not indicate the seventh with any degree of certainty. However, the names of seven pueblos are given by two accounts of the latter period, each of which puts the number at six: Aquicobi (Ahacus, Aquico, Agrisco, Aguscobi, Havico), Canabi (Cana), Coaqueria (Cuaquema), Halonagu (Oloná), Macaqui (Maçaque, Malaque), Aquinsa, and Cuaquina. These have been identified by Bandelier³ and Hodge⁴ as follows: Aquicobi with Hawwikku, Canabi

¹ Bandelier, (a), 3-23.

² Cf. Hodge, (c), 1017; Bandelier, (c), 84.

³ Bandelier, (c), 84; (b), 337-339.

⁴ Hodge (a), 149; (c), 1017; in Stevenson, 284.

with Ketteippawa,¹ Coaqueria with Kyakkima,² Halonagu with Hallonawa, Macaqui with Mattsakya, and Aquinsa with Pinnawa.³ Cuaquina remains unidentified. The recognizable orthography of the early records and the indicated positions of the pueblos makes the identifications of some of them fairly simple. Thus the most southwesterly village of Oñate is Hawwikku, and that midway between this point and Pescado Springs is evidently Mattsakya. These attempts at identification have, of course, not been based on archaeological evidence.

It is possible to appeal directly to our archaeological data for confirmation of these suggested identifications. The question to put to ourselves is simply "Is the same type of pottery found on the surface of all of these ruins?" Referring to the data given in Table I for Ketteippawa, Kyakkima, and Mattsakya (Nos. 13, 45, and 48) we find the following percentages: —

	Corrugated	Black	White	Red	Buff
Ketteippawa	0	43	9	16	32
Kyakkima	6	46	17	16	15
Mattsakya	3	56	12	7	22

to which may be added data for

Hawwikku ⁴	0.5	49	10	16	24
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These ruins constitute a group representing wares of the same type and proportions. On the other hand both Pinnawa and Hallonawa (Nos. 33 and 39) present striking differences from this group and from each other: —

Pinnawa ⁵	11	50	16	19	6
Hallonaw ⁶	60	0	15	25	0

¹ Hodge, (a), 148 as T'kanawe = Kyanakwe ("water-place"), the general name for the Ojo Caliente region. Bandelier, (b), 338-339, confuses the names Chyan-a-hue and Ketchip-a-uan referring to the same ruin.

² There are references to the "Peñol de Caquima," evidently meaning Towwayallanna at the foot of which rests Kyakkima, Bandelier, (b), 335, footnote.

³ "A-pinaua (three miles southwest of Zuñi and in ruins)," Bandelier, (c), 84; (b), 338, footnote; Hodge, (a), 149, is doubtful of this identification; Cushing, (b), 155, footnote, gives Kwa-ki-na and Pinnawa.

⁴ Percentages for corrugated and black based on actual count, the others suggested by another sample from which these two wares had been removed. Both samples collected by Dr. Kroeber.

⁵ Average of three upper layers.

⁶ Probable percentages suggested by imperfect collections; certainly neither black nor buffware is present at this ruin.

Quite as marked as these differences are those in the character of the wares. The first group is homogeneous; the wares from Pinnawa are identical with those at the bottom of the Mattsakya refuse heap and bear a more remote resemblance to the wares from its surface: while sherds from Hallonawa would never be confused with any of the others. The situation in its simplest terms is just this. We have here three different groups of data, only one of which can refer to the date under consideration if we are to hold to our fundamental assumption that at any time there was only one definite pottery art, not a random display of heterogeneous stylistic preferences. No matter which one of these groups of data we may select, the other two cannot possibly refer to the same point of time. No matter which we may select, the suggested identification of the pueblos enumerated by the early explorers will not be corroborated. We are thus left with two alternatives: either the identifications or the lists of pueblos are incorrect.

On the basis of the types of pottery present we must concur in the identification of Hawwikku, Kettcippawa, Kyakkima, and Mattsakya as pueblos inhabited at the close of the sixteenth century. But on the same grounds, we cannot concede that either Pinnawa or Hallonawa were occupied at that time. Several explanations of the doubtful identifications of these pueblos present themselves.

Dr. Kroeber suggests that the "Aquina" of Oñate's list is the native name "Akinnsa" or "Appkinnsa" (*awa*, rocks + *kinnsa*, black) for Black Rock or Rocks, as it is variously styled. Black Rock, where the agency now stands four miles up the valley from Zuñi, is a long cliff of black igneous rock caused by a geologic faulting at this point. This is particularly suggestive, for when we turn to Oñate's list, where the name "Aquina" occurs, we find that the names of the villages are given *in order up the river* from Hawwikku¹ — an order exactly that of the identified ruins, Hawwikku, Kettcippawa, Kyakkima, Hallonawa (we will return to this later), Mattsakya, and *then* Aquina is added. If Pinnawa is meant by Aquina, then after giving the pueblos consecutively up the valley, the enumerator abruptly broke the order and returned down the valley four miles from the last pueblo mentioned, Mattsakya, to add Pinnawa as an afterthought. If it had been intended to include Pinnawa, then its name would have appeared in the ordered list before Hallonawa and Mattsakya.

We endeavored to follow up this identification of Aquina with Black Rock, but without success. A search of the vicinity revealed a number of hitherto unreported sites but nothing that would correspond to the Aquina of Spanish times. However, the site is a favorable one and the ruins of such

¹ The list was prepared at Hawwikku according to Bandelier, (c), 84.

a pueblo, probably a small one, may yet be found below the cliffs, on them or in the broad valley above, now nearly obliterated by the reservoir.¹ We would suggest somewhat doubtfully that by Aquinsa a settlement in the vicinity of the Pescado Springs may have been meant. They lie thirteen miles up the valley where another cliff of igneous rock is exposed, which is, however, not nearly so prominent as the agency site. This place might well deserve the name "Black Rocks." But it is extremely doubtful that a sixteenth century site will be found, since Oñate saw no settlement there.²

The name "Halonagu" occurring in the lists presents a different problem. It is evidently to be identified with the name "Hallonawa," as other writers have indicated. The difficulty which has arisen in connection with identifying the pueblo of this name seems to be due to a confusion in its application. We would suggest that the name Hallonawa in the sixteenth century records was not applied to the ancient pueblo Hallonawa, but to the pueblo Zuñi itself.³ The ruins of Hallonawa lie immediately across the Zuñi River from Zuñi pueblo and are now almost completely obliterated by the extensions of the modern village and traders' stores. But the name Hallonawa is a general name for the locality. Zuñi⁴ itself is commonly called "Hallonawa" by a Zuñi away from home. The same seems to have been true ever since the present pueblo was founded. There was evidently a settlement of that name when the church and mission of "La Purificacion de la Virgen de Alona" were established about 1629⁵ and destroyed in 1680.⁶ On their descent from the refuge village on Towwayallanna after the Pueblo Rebellion the Zuñi are commonly believed to have concentrated at the site of their present pueblo, which appears under the name of "La Purisima de Zuñi" when visited by Pedro Rodriguez Cubero in 1699.⁷ From this time

¹ Simpson, (a), 117, saw to the north of the present dam "some old but comparatively recent buildings and corral enclosures," built of lava. "The circuit of the pueblo, in plan, is about five hundred by one hundred feet." There are occupied small houses there now, but we noticed no large pueblo. Whipple, I, 66, saw gardens in the vicinity. The site would bear reëxamination.

² See above, p. 270.

³ We do not mean that ancient Hallonawa was built on both sides of the river, for we found no certain signs of it under the houses of modern Zuñi. Cf. Hodge, (c), 527, 1017; Bandelier, (b), 337; Mindeleff, 88.

⁴ The name Zuñi would appear to have had local application only in recent times, probably since the advent of the Spaniards. Hodge, (c), 1016 suggests that it is a Spanish adaptation of the Keresan *Sūnyitsi* or *Sū'nyitsa*.

⁵ Hodge, in Stevenson, 284.

⁶ Hodge, in Stevenson, 285. The early records relating to the establishment of the church are not available to the present writer, but none of the secondary sources that we have consulted refer to two churches, one in Hallonawa, the other in Zuñi, with the exception of Hodge's doubtful reference to the church "which formerly existed at Halona," in Stevenson, 284. So far as we are aware no church ruins were found in the excavations at Hallonawa, nor are there any superficial signs of such a structure.

⁷ Hodge, in Stevenson, 285.

on the documentary notes all evidently refer to the present pueblo Zuñi, yet in 1707 Fray Francisco de Irazábal was missionary at "Alona,"¹ in 1715 Governor Mogollon sent twenty-five men to "Alona" to protect the Zuñi against the Apache,² and in 1716 natives were sent from Zuñi, still called Alona, to the Hopi.³

The documentary evidence is then that before the Pueblo Rebellion of 1680-92 there was a settlement known as "Hallonawa" where the pueblo now stands on the north bank of the river.⁴ The oldest pottery types found beneath modern Zuñi⁵ are those found in the upper layers of the ash heaps at Mattsakya, Kyakkima and Ketteippawa and on the surface at Hawwikku, and therefore referable to the sixteenth or seventeenth centuries, or perhaps somewhat earlier. The evidence of the pottery types from Hallonawa indicates that the ruin south of the river antedates the foundation of the present pueblo by a considerable period.

This attempt at the identification of the documentary name "Halonagu" has led us then to fix the foundation of Zuñi pueblo. So far as the excavations in the modern village show, the pre-Rebellion settlement was probably quite small and occupied only the summit of the little knoll now entirely covered by houses.⁶

We have then identified six of the seven pueblo names given in the sixteenth century records. The explorers from Chamuscado on agree that the pueblos numbered only six although the seventh name "Cuaquina," is given by Luxán as that of an occupied village. We have failed to identify such a pueblo.⁷

We cannot proceed with the subject of the sequence of pottery types, until the exact historical provenience of these ruins is established. Thus far we have found that Hawwikku, Ketteippawa, Kyakkima, and Mattsakya, and possibly Zuñi-Hallonawa were occupied in the sixteenth century, but we must inquire as to the date at which they were abandoned.

Hawwikku was occupied in 1629 when the mission of "La Concepcion de Hawikuh" was established. The Zuñi murdered their priest at this village, in 1632 and fled to Towwayallanna, where they remained about three years, the resettlement of their villages beginning in 1635.⁸ The

¹ Hodge, in Stevenson, 286.

² Twitchell, (b), II, 178.

³ Hodge, in Stevenson, 286.

⁴ The alternative to the identification of Zuñi with "Halonagu" is that somewhere in the vicinity of Zuñi, say within half a mile, a ruin of the sixteenth century with church ruins will be found. This is extremely doubtful.

⁵ See above, Table II.

⁶ See this volume, p. 189 et seq and p. 228.

⁷ "Cuaquina" may be Kwakina, a ruin said to lie on the northern side of the valley some miles west of Zuñi. Unfortunately, we did not visit this ruin.

⁸ Hodge, in Stevenson, 284, 285.

mission was destroyed by raiding Apache (or Navajo) and abandoned in 1670 (1672 ?),¹ but the pueblo was still inhabited at the time of the Rebellion in 1680.² At that time the Zuñi again abandoned their villages fleeing to Towwayallana: Hawwikku does not appear to have ever been reoccupied.³

Ketteippawa contains the ruins of a church, indicating that the pueblo was inhabited after 1629, but its name is not mentioned in 1680 or later. It must have been abandoned between these dates.⁴

Kyakkima and Mattsakya were both inhabited at the time of the Rebellion, 1680; the latter being one of the two "aldeas de visita" of the mission of Alona.⁵ Both were evidently abandoned in favor of Zuñi-Hallonawa when the natives descended from their refuge on Towwayallanna in 1692.

No mention is made of Aquinsa after 1598, and if such a village existed at that time it must have been abandoned before 1680 when only Hawwikku, Kyakkima, Mattsakya, and Zuñi-Hallonawa were inhabited.

Mention had been made of the use of the refuge village on Towwayallanna, the mesa that dominates the central part of the Zuñi Valley. On July 19, 1540, Coronado went "4 leagues from this city [Hawwikku] to see a rock where they told him that the Indians of the province had fortified themselves",⁶ evidently to Towwayallanna. In 1632 the Zuñi fled to their refuge village, where they remained about three years.⁷

They occupied the mesa top again during the Pueblo Rebellion from 1680 for more than twelve years, for they were found there by Diego de Vargas in 1692. Again in 1703 they reoccupied the mesa temporarily, returning to Zuñi-Hallonawa in 1705.⁸

It would therefore appear that all the pueblos of the sixteenth century, except Zuñi-Hallonawa, were abandoned during the next century. The slight difference in time of abandonment seems to have left no appreciable mark on the wares found surficially at the several ruins. The slight differences we found (p. 272) are evidently not significant.

¹ Bandelier, (b), 338, footnote; Hodge, (a), 144; (b), 300, footnote; in Stevenson, 285.

² Cf. Bandelier, (a), 174.

³ Hodge, in Stevenson, 285.

⁴ After 1636, Bandelier, (b), 338, footnote.

⁵ Bandelier, (b), 337, footnote.

⁶ Winship, 565; Bandelier, (b), 335. This passage does not necessarily imply that Towwayallanna was used as a refuge prior to 1540: the warlike preparations for Coronado's coming may have been the first of the kind. We found nothing in the samples of the sherds obtained on the mesa to indicate its use in pre-Spanish times.

⁷ Hodge, in Stevenson, 284; cf. Bandelier, (b), 335, footnote.

⁸ Hodge, in Stevenson, 285; Bandelier, (b), 335.

HISTORIC AND LATE SITES.

Excavations for a pottery sequence were made in the ash heaps of all the historic pueblos except Hawwikku. The net result of this so far as Kettippawa and Kyakkima (Nos. 13 and 45) were concerned was to establish the fact that their refuse deposits were very thin; so thin, in fact, as to preclude stratigraphic work. No differences were found between the wares from the top and the bottom of these shallow deposits. The significant fact is that these two pueblos were evidently occupied for a relatively short period.

On the other hand deep and extensive ash heaps were found at Mattsakya (No. 48). While probably no larger than the other two pueblos, this site had been occupied for a considerable period. Certain well-defined changes were at once noted in the types present. These were differences in proportions in wares present at top and bottom: an increase in percentage of corrugated ware and a decrease in that of buff were found on working downward, while the percentages of black, white, and red remained stationary. Equally significant stylistic changes occurred in white, red, and buff wares.

Excavation at Pinnawa (No. 33) uncovered the deepest refuse heap found by us in the Zuñi region. Nevertheless the pueblo must have been rather small. Coupled with these characteristics are the marked fluctuation in proportions and types of wares observed in the refuse heap; all indicative of a prolonged occupancy. The differences in proportions are an increase in percentage of redware, but decreases in black and buff. Changes in style are more marked than in the case of Mattsakya. The significant point is that the wares from the upper levels at Pinnawa are indistinguishable from those from the lower levels at Mattsakya. There can be no doubt whatever that the occupation of the latter site, despite slight differences in proportions of the identical wares, was practically continuous with that of the former.

Site 8, near Hawwikku, more closely resembles the historic sites in types present than it does Pinnawa. We have concluded this in Table IV in which these historic and late sites are ranked.

These relations are partly obscured by the manifold classification in this table. To make the point emphatic it will be found convenient to group these types according to some major classification, either by technique or by body color. The latter is preferable for our purpose, inasmuch as half the sherds are black ware and the percentages of the remaining technical types would still be so small that they would be obscured by their variations.

TABLE IV.
LATE AND HISTORIC SITES.

Site	Corru- gated	Black	Two Color Painted Ware			Three Color Painted Ware			Two Color Glazed Ware			Three Color Glazed and Painted Ware			Size of Sample
			White	Red	Buff	White	Red	Buff	White	Red	Buff	White	Red	Buff	
13	.....	43	5	3	19	.....	.....	10	4	9	1	.....	4	2	259
45	7	44	12	3	14	.....	.....	.....	4	7	.....	.....	9	.....	73
South slope	6	46	7	3	15	.....	.....	.....	5	5	.....	5	8	.....	327
48	3	56	9	3	13	.....	1	.....	2	1	8	.....	2	1	502
Surface	1	54	18	.....	19	.....	.....	.....	6	1	1	.....	.....	.....	84
1 ¹	2	48	13	1	14	.....	1	2	7	1	6	4	1	.....	174
2	4	47	7	1	13	.....	2	5	6	4	4	7	.....	.....	206
3	3	53	7	3	14	.....	6	5	4	2	.....	3	.....	.....	221
4	5	46	6	1	21	.....	1	1	5	1	1	9	2	1	237
5	4	53	7	3	10	.....	7	4	5	2	2	1	1	.....	285
6	8	49	7	.....	15	.....	6	3	5	2	1	4	.....	.....	283
7	12	49	7	3	8	.....	3	3	4	2	3	5	1	.....	187
8	7	51	3	.....	6	.....	2	3	9	3	2	10	2	2	127
9	7	61	10	6	8	.....	4	3	1	1	.....	.....	2	.....	204
8	13	21	17	4	17	.....	.....	.....	4	4	.....	2	18	.....	48
Surface	15	41	7	7	12	.....	7	.....	.....	11	.....	.....	.....	.....	27
S. E.	8	58	4	6	11	.....	.....	6	1	6	.....	.....	.....	.....	71
S. W.	10	50	8	6	5	.....	2	.....	4	7	.....	2	6	.....	192
1	12	48	9	4	5	.....	.....	.....	3	5	.....	4	7	.....	338
2	16	49	7	2	6	.....	.....	.....	4	4	.....	4	.....	.....	226
3	11	40	4	1	7	.....	4	.....	3	3	.....	10	14	.....	245
4	14	35	8	6	4	.....	3	.....	1	2	.....	7	10	.....	191
5	13	42	10	5	5	.....	4	.....	1	3	.....	.....	6	.....	302
6	15	34	11	6	3	.....	6	.....	2	3	.....	3	7	.....	549
7	12	30	7	7	7	.....	6	.....	4	2	.....	3	16	.....	610
8	12	30	6	7	10	.....	6	.....	3	4	.....	3	13	.....	344
9	12	30	6	7	10	.....	6	.....	3	8	.....	3	16	.....	179
10	9	35	6	8	6	.....	2	.....	5	6	.....	3	12	.....	237
11	19	35	3	3	2	.....	3	.....	.....	.....	.....	3	.....	.....	.....
12	12	21	9	17	1	.....	.....	16	4	7	.....	3	10	.....	121

¹ This series gives the weighted averages from both sections at Matsakya, except that No. 9 is from the first section only.

These series, have, therefore, been classified by body or ground color in Table V where the point comes out clearly. We may summarize the changes in proportions by the following averages for the three upper and lower levels at Mattsakya and Pinnawa: —

		Corrugated	Black	White	Red	Buff
Mattsakya	Upper	3	49	23	4	22
	Lower	9	50	22	4	16
Pinnawa	Upper	11	50	16	19	6
	Lower	14	33	14	37	2

TABLE V.

LATE AND HISTORIC SITES BY GROUND COLORS.

Site		Corrugated	Black	White	Red	Buff	Size of Sample
13			43	9	16	32	259
45	East slope	7	44	16	19	14	73
	South slope	6	46	17	16	15	327
48	Surface	3	56	12	7	22	502
	1	1	54	24	1	20	84
	2	2	48	24	4	22	174
	3	4	47	22	5	22	206
	4	3	53	20	5	19	221
	5	5	46	21	4	24	237
	6	4	53	20	7	16	285
	7	8	49	22	2	19	283
	8	12	49	19	6	14	187
	9	7	51	24	5	13	127
8	Surface	7	61	15	9	8	204
	S. E.	13	21	23	26	17	48
	S. W.	15	41	14	18	12	27
33	1	8	58	5	18	11	71
	2	10	50	16	19	5	192
	3	12	48	16	19	5	338
	4	16	49	15	14	6	226
	5	11	40	21	21	7	245
	6	14	35	19	28	4	191
	7	13	42	15	25	5	302
	8	15	34	22	26	3	549
	9	12	30	20	31	7	610
	10	12	30	18	30	10	344
	11	9	35	14	36	6	179
	12	19	35	14	30	2	237
	13	12	21	16	50	1	121

SEQUENCES BY SERIATION.

Thus far the stratigraphic method has been simple and productive of unequivocal results, but beyond this point it fails us. There are no other ruins in the Zuñi region with pottery similar to that of Pinnawa, nor any which by type or proportions would appear to have immediately preceded it in point of time.¹ Nevertheless, it has long been recognized that pottery from the Zuñi region, or more generally, from the Little Colorado, presents a community of characteristics which have served to emphasize the essential unity of the wares.² This fact is borne in on us again by the result of the present inquiry, and indeed, one has only to observe the unity of style in the wares from Hecota'utlla and Hallonawa published by Dr. Fewkes — accidentally mixed pottery from the two ruins — or to compare them with wares figured in the present report to reach the same conclusion. Possibly we must except the pottery from "black-and-white" ruins from this general statement, for their specifically Zuñian characters are by no means marked. It is true that the red pottery painted in black which characterizes some of the earlier sites bears little more than a generic resemblance to the wares of the Hecota'utlla-Hallonawa type — those we think of as characteristic of the Zuñi region; yet, that pottery occurs with the latter wares in other ruins and occurs with them again at Pinnawa, Mattsakya, and other historic ruins.

We have then in the Zuñi region a large number of ruins, all presenting much the same general style of pottery, but with differences of technique and color scheme from ruin to ruin. It seems reasonable to believe that we are dealing with no other phenomenon than the several phases of a single pottery art. The essential need is therefore a principle for the seriation of the data, to be subjected to the method of proof by concurrent variations.

The sequence which we have already reviewed for the historic and late sites suggests such a principle. We have found among the other indicated changes that corrugated ware increases steadily in its proportions from complete absence in modern Zuñi to fourteen percent of the whole in the lowest levels of the Pinnawa ash heap. It seems possible then to utilize the fluctuations in this type for a first grouping, a preliminary seriation of the data from superficial samples. It will be recalled that Dr. Kroeber found the variations in this ware particularly suggestive.³ It might prove

¹ Naturally such sites must exist elsewhere, but we will return to this point later.

² Thus, for example, Dr. Kidder (a, 453) is able to speak of the close affinities of old Zuñi wares with those of the Little Colorado and their less involved relations with those of the Pajarito Plateau. Similarly, Mr. Nelson was able, at the close of his reconnaissance trip of 1916, to define the somewhat restricted area of specifically Zuñian wares for the writer.

³ This volume, page 14.

fertile then to arrange these data according to their percentages of corrugated ware in sequence from lowest to highest. But we find on referring to the data given in Table I that the samples fall into two groups. In each group corrugated ware is present in proportions varying from complete, or almost complete absence up to more than half of the whole. But any two corresponding samples from the two groups, with identical percentages of corrugated ware, have radically different wares associated with them. In one group the associated wares are black, white, red, and buff occurring in several combinations. In the other group the sole associated type is whiteware of the "black-and-white" variety. For example, of two samples with 48 percent corrugated, Ruin No. 58 has as associated wares 32 percent of redware and 20 percent of whiteware, while Ruin No. 38 yields only 52 percent of whiteware. But there can be no doubt with regard to the affinities of the two groups. The first presents wares with a style of treatment specifically Zuñian in character, bearing a marked resemblance to those in the series from the historic and late series, while we have already expressed our uncertainty as to the affiliations of the wares of the second group. It seems best for the present to consider the first group only.

The first group can be subdivided into two groups, in one of which there is no glazed decoration, the other contains glaze-decorated ware. The percentages of corrugated ware in the first subdivision average higher than those in the second. Further, the criterion of glaze would include the historic and late sites in the second subgroup. This would suggest that we are dealing here with a sequence of painted wares followed by glazed wares: a suggestion worth putting to the test by the method of concurrent variations. It will be convenient to handle each of these subgroups separately.

PAINTED WARE SERIES.

The first subgroup contains thirty-five samples from as many ruins. The wares are corrugated, black-on-white, black-on-red, and black and white-on-red. These samples may be arbitrarily ranked according to their percentages of corrugated ware from highest to lowest. The test of such a seriation as an historical series will lie in the observed seriation of the accompanying wares; for, when a group of three or more distinct, but mutually dependent, values are ranked according to some postulated sequence for one, and the other values are found to present serially concurrent variations, it may be concluded that the result is not fortuitous.

Ranking the samples in descending order according to their percentages of corrugated ware, we find general changes in both accompanying wares: an increase in percentage of redware and a decrease in that of whiteware.

The changes are not marked, however, as they are obscured by variations in these wares.

We have found that another seriation based on the percentages of redware yields a clearer result. That this should be so is obvious, because the percentages of redware are small as compared with those of white and corrugated ware, and by ranking redware percentages in a smooth sequence all variations will appear in relatively small magnitudes in the white and corrugated series. The seriation was suggested by the fact that redware is the predominating type in the second subgroup but does not appear at all in the group of "black-and-white" wares. It seemed reasonable to suppose, therefore, that redware had its beginnings in the subgroup with which we are dealing and rose in intensity of use therein.

On this assumption we have ranked the samples according to ascending percentage of redware (Table VI). The results are striking: there is a slight, but certain, decrease in corrugated ware and a marked decrease in whiteware. More particularly, there is rigid segregation of the values for the two wares: few values for corrugated less than 40 percent are found, while equally few values of white lie above the same point. The distribution of the wares may be indicated by curves of the type:—

for corrugated ware:—

$$y' = 49.3 - 0.26 x$$

and for whiteware:—

$$y'' = 36.7 - 0.74 x$$

where y' and y'' are percentages of corrugated and whiteware respectively for the deviation x from the midpoint of the redware series, 14 percent. In these equations -0.26 and -0.74 express the direction of the slope of the curves and their obliquity. Testing these curves for closeness of fit, we find that the deviations of the observed values from the theoretical values computed from these formulae are as often positive as negative; that is, that the variations appear to be accidental and that the curves represent the distributions fairly well.

Another point brought out by this seriation is of equal importance. We have included in the redware in this subgroup sherds bearing decorations in white as well as black, i. e., three-color painted ware. We find that this ware appears only in samples containing 14 percent or more of redware, that is, in the second half of the series. We pointed out above that there was every reason to assume that this subgroup of painted wares preceded that of glazed wares. Now we find that the second half of this subgroup coincides in its three-color redware with the characteristic style, three-color decoration, of the glaze subgroup. This must be considered as corroboration of the historical reality of our assumed sequence.

TABLE VI.

PAINTED WARE SERIES ACCORDING TO ASCENDING PERCENTAGE OF REDWARE.

Site	Painted Wares			Corrugated	Size of Sample
	Red		White		
	Two Color and Three Color	Three Color			
6	1-	.....	55	45	131
23	2	.....	64	34	117
21	2	.....	74	24	167
165	2	.....	56	42	146
24	2	.....	50	48	230
17	3	.....	62	35	109
18	5	.....	45	50	153
58	6	.....	29	65	105
60	7	.....	48	45	118
19	8	.....	36	56	184
40	8	.....	38	54	79
29	9	.....	29	62	56
167	10	.....	48	42	101
76	10	.....	37	53	44
164	10	.....	28	62	161
5	12	.....	43	45	118
26	13	.....	43	44	61
1	13	.....	35	52	59
28	14	1	33	53	110
95	15	3	25	60	116
56	16	.....	28	56	29
74	16	4	23	61	68
36	18	2	17	65	200
27	18	1	38	44	133
80	18	3	39	43	104
62	19	7	27	54	164
37	20	2	30	50	247
38	20	.....	35	45	134
4	22	2	25	53	335
92	22	2	35	43	93
46	24	.....	41	35	298
163	25	.....	39	36	38
96	30	4	20	50	136
86	32	10	20	48	117
90	39	3	23	38	112

GLAZED WARE SERIES.

The second subgroup is characterized by the presence of decoration in glaze. In this group would be included the familiar wares of Hecota'utlla and Hallonawa figured by Fewkes. The group includes corrugated ware, painted wares of the types black-on-white, black-on-red, brown-on-buff, and black and white-on-red; glazed wares of the types black-on-white and black-on-red; and combination painted and glazed wares of the black and white-on-red type. Glazed and painted wares of all types form a homogeneous group from a stylistic viewpoint. Glazed wares may be conceived as those in which a line of glaze has been substituted in the decoration for a line of paint.

We have surface samples from only eight ruins in this subgroup. These have been ranked in the first section of Table VII in descending order of percentages of corrugated ware according to our assumption. To bring out the distribution of values more clearly these have been grouped by body color in Table VIII. The concomitant variations in the white and redwares are clear: whiteware increases slightly, while redware has a more decided increase. The distributions of these values take the form of curves of the type:—

for whiteware:—

$$y' = 23.9 - 0.24 x$$

and for redware:—

$$y'' = 33.3 - 0.76 x$$

where y' and y'' are percentages of white and redware respectively for the deviation x from the midpoint of the corrugated series, 42.9 percent. Here, the values -0.24 and -0.76 express the degree and direction of slope of the two curves. By the usual test for fit, we find that observed values do not differ greatly from the theoretical and are alternately positive and negative. While definite results are obtained from this seriation, it must be remembered that they are based on a small number of cases, only eight. We would therefore consider these results as indicative but not certain.

In Tables VII and VIII we have also given the data for a number of sections made with one exception in ruins east of the Zuñi Reservation. All clearly belong to this subgroup, but their sequential relations are not clear. For convenience, these tabulations have been placed in an order similar to that for the series of surface samples. This was suggested in part by progressive stylistic changes observed in them. It is hopeless to try to find a confirmation of the series for surface samples, because the

samples from the sections are small and the percentages fluctuate widely. All are evidently closely related from the sequential standpoint, yet we cannot combine them since we do not know where to begin to equate values from the several series.

It will be noted that buffware enters into only one sample in the series; at Ruin No. 146 (Gigantes) where 1 percent occurs.

The point might be advanced that we have failed to link up this group with that of the historic and late ruins. That is true. However two points must be kept in mind in considering this objection: first, we have given only the data available for statistical treatment, and second, we are considering here only the arbitrarily selected area defined above as the Zuñi region. We must reserve the discussion of this point until we consider the extra-regional affinities of the wares.

TABLE VII.
GLAZED WARE SERIES ACCORDING TO DESCENDING PERCENTAGE OF CORRUGATED WARE.

Site	Corrugated	Two Color Painted Ware			Three Color Painted Ware			Two Color Glazed Ware			Three Color Glazed and Painted Ware			Size of Sample
		White	Red	Buff	White	Red	Buff	White	Red	Buff	White	Red	Buff	
91	59	21	14	.....	.....	5	.....	.....	1	.....	.....	.....	.....	96
75	54	21	12	.....	.....	9	.....	.....	2	.....	.....	2	.....	113
84	46	18	7	.....	.....	.....	.....	6	12	.....	.....	11	.....	199
85	46	15	13	.....	.....	3	.....	5	5	.....	.....	13	.....	239
30	37	22	13	.....	.....	9	.....	1	7	.....	.....	11	.....	207
82	36	28	29	.....	.....	6	.....	.....	1	.....	.....	.....	.....	149
11	35	4	16	.....	.....	.....	.....	21	12	.....	.....	12	.....	128
81	30	29	22	.....	.....	16	.....	.....	.....	.....	.....	3	.....	115
121	70	10	5	.....	.....	15	.....	.....	.....	.....	.....	.....	.....	20
4	63	12	13	.....	.....	12	.....	.....	.....	.....	.....	.....	.....	59
3	52	18	11	.....	.....	15	.....	.....	.....	.....	.....	4	.....	27
2	53	14	12	.....	.....	20	.....	.....	.....	.....	.....	1	.....	76
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
104	67	17	8	.....	.....	8	.....	.....	.....	.....	.....	.....	.....	12
13	88	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8
12	88	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	26
11	65	8	19	.....	.....	8	.....	.....	.....	.....	.....	.....	.....	19
10	84	5	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	36
9	61	22	11	.....	.....	.....	.....	.....	.....	.....	.....	6	.....	49
8	63	16	14	.....	.....	7	.....	.....	.....	.....	.....	.....	.....	81
7	59	14	9	.....	.....	9	.....	2	2	.....	.....	5	.....	.....

3	38	12	20	.....	10	.....	10	.....	40
2	49	6	16	.....	6	.....	6	.....	51
1	48	6	24	.....	10	.....	12	.....	100
149	6	33	25	.....	9	.....	8	.....	12
5	38	24	21	.....	10	.....	7	.....	29
4	52	16	18	.....	3	.....	3	.....	38
3	56	4	13	.....	20	.....	5	.....	55
2	45	16	30	.....	4	.....	4	.....	81
71	4	51	14	.....	12	.....	.....	.....	43
3	51	20	9	.....	14	.....	2	.....	51
2	39	39	9	.....	5	.....	5	.....	57
1	43	24	19	.....	8	.....	6	.....	150
Surface	47	22	16	.....	8	.....	1	.....	225
161a	8	50	11	.....	8	.....	3	.....	36
7	55	24	4	.....	17	.....	6	.....	29
6	25	19	17	.....	33	.....	.....	.....	36
5	62	5	23	.....	5	.....	5	.....	21
4	43	18	14	.....	11	.....	11	.....	28
3	53	14	25	.....	5	.....	3	.....	36
2	46	20	18	.....	13	.....	3	.....	61
161b	4	41	13	.....	13	.....	4	.....	74
3	40	20	26	.....	12	.....	2	.....	50
2	48	23	16	.....	10	.....	2	.....	102
97	6	38	23	.....	8	.....	.....	.....	13
5	8	8	50	.....	34	.....	.....	.....	12

TABLE VII (Concluded).

Site	Corru- gated	Two Color Painted Ware			Three Color Painted Ware			Two Color Glazed Ware			Three Color Glazed and Painted Ware			Size of Sample
		White	Red	Buff	White	Red	Buff	White	Red	Buff	White	Red	Buff	
97	4	21	13	.....	.....	19	.....	3	.....	.....	.....	.....	.....	34
	3	31	13	.....	.....	13	.....	.....	.....	.....	.....	2	.....	39
	2	23	8	.....	.....	20	.....	.....	.....	.....	.....	3	.....	39
146	8	17	25	.....	.....	12	.....	.....	.....	.....	.....	4	.....	24
	7	17	18	.....	.....	23	.....	3	.....	.....	.....	.....	.....	60
	6	12	22	.....	.....	9	.....	.....	3	.....	.....	3	.....	67
	5	11	13	.....	.....	15	.....	.....	5	.....	.....	5	.....	75
	4	17	19	.....	.....	16	.....	2	6	.....	.....	4	.....	84
	3	8	26	.....	.....	10	.....	4	5	.....	.....	1	.....	77
	2	12	17	.....	.....	19	.....	.....	9	.....	.....	.....	.....	103
	1	15	20	1	.....	20	.....	.....	2	.....	.....	1	.....	148
139	4	12	32	.....	.....	16	.....	.....	7	.....	.....	3	.....	69
	3	11	41	.....	.....	7	.....	.....	9	.....	.....	.....	.....	44
	2	10	34	.....	.....	23	.....	.....	5	.....	.....	3	.....	96
	Surface	11	30	.....	.....	22	.....	.....	8	.....	.....	2	.....	95

TABLE VIII.
GLAZED WARE SERIES BY GROUND COLORS.

Site	Corrugated	White	Red	Buff	Size of Sample
91	59	21	20	.....	96
75	54	21	25	.....	113
84	46	24	30	.....	199
85	46	20	34	.....	239
30	37	23	40	.....	207
82	36	28	36	.....	149
11	35	25	40	.....	128
81	30	29	41	.....	115
121 4	70	10	20	.....	20
3	63	12	25	.....	59
2	52	18	30	.....	27
1	53	14	33	.....	76
104 13	67	17	16	.....	12
12	88	12	.....	.....	8
11	65	8	27	.....	26
10	84	5	11	.....	19
9	61	22	17	.....	36
8	63	16	21	.....	49
7	59	16	25	.....	81
6	55	24	21	.....	38
5	41	16	43	.....	86
4	50	13	37	.....	32
3	49	19	32	.....	41
2	55	14	31	.....	49
1	60	7	33	.....	66
140a 6	64	.....	36	.....	11
5	48	9	43	.....	21
4	47	3	50	.....	34
3	67	9	24	.....	33
2	44	23	33	.....	48
1	50	16	34	.....	62
140b 14	33	10	57	.....	42
13	49	13	38	.....	67
12	68	14	18	.....	167
11	30	36	34	.....	33
10	33	17	50	.....	41
9	33	17	50	.....	12
8	12	35	53	.....	17
7	24	29	47	.....	17
6	26	23	51	.....	34
5	29	6	65	.....	17
4	70	5	25	.....	86

TABLE VIII.—(Continued).

Site	Corrugated	White	Red	Buff	Size of Sample
140b 3	38	12	50	.....	40
2	49	6	45	.....	51
1	48	6	46	.....	100
149 6	33	25	42	.....	12
5	38	24	38	.....	29
4	52	16	32	.....	38
3	56	4	40	.....	55
2	45	16	39	.....	81
71 4	51	14	35	.....	43
3	51	22	27	.....	51
2	39	39	22	.....	57
1	43	24	33	.....	150
Surface	47	23	30	.....	225
161a 8	50	28	22	.....	36
7	55	24	21	.....	29
6	25	19	56	.....	36
5	62	5	33	.....	21
4	43	18	39	.....	28
3	53	17	30	.....	36
2	46	23	31	.....	61
161b 4	41	16	43	.....	74
3	40	20	40	.....	50
2	48	24	28	.....	102
97 6	38	31	31	.....	13
5	5	8	84	.....	12
4	44	24	32	.....	34
3	41	31	28	.....	39
2	46	23	31	.....	39
46 8	42	17	41	.....	24
7	39	20	41	.....	60
6	51	12	37	.....	67
5	51	11	38	.....	75
4	36	19	45	.....	84
3	46	12	42	.....	77
2	43	12	45	.....	103
1	41	15	43	1	148
139 4	30	12	58	.....	69
3	32	11	57	.....	44
2	25	10	65	.....	96
1	27	11	62	.....	95

BLACK-ON-WHITE SERIES.

The group of samples comprising corrugated and painted black-on-white wares remains to be considered. It is not certain that these form an integral part of the series we have been considering. Still it has been shown that redware comes into being in a group consisting in addition only of corrugated and painted black-on-white ware. It would therefore be reasonable to expect that some of the samples in the present group belong immediately before the painted redware series. Such samples would be those with the highest percentages of corrugated ware.

We have some stratigraphic evidence bearing on relations in this group, however. Sherds from Sites Nos. 3, 7, 14, 15, and 50 indicate an overwhelming proportion of black-on-white ware of a peculiar style associated with plain white vessels having globular bodies surmounted by straight or constricted zones sometimes bearing a few broad coils. Sherds bearing such corrugations constitute only 1 to 4 percent, but inasmuch as the bodies of the vessels were not corrugated, these values do not represent the correct proportions of the wares. We would suggest that about one-eighth of all the vessels bore coils. The characteristic feature of these ruins, as described in a preceding section, was the almost complete absence of masonry. At Shoptluwayala (No. 40), on the edge of Zuñi village, we found remains of the regular pueblo type superposed on a "slab-house" with which the above types of pottery were associated. The relation of the two structures is indicated by the pottery data: —

	Corrugated	White	Red
Surface	54	38	8
Trench (all levels)	29	63	8

The finds in the trench are just what might be expected if the surface types were mixed at random with 2 percent corrugated and 98 percent whiteware of "slab-house" type.

The sequential relations of this type appear to be identical with stratifications found by Dr. Kidder along the San Juan River¹ and by Mr. Morris in the valley of La Plata River, San Juan County, New Mexico.² There can be little doubt that these are the oldest remains in the Zuñi region.

¹ Personal communication from Dr. Kidder, July 4, 1916. Dr. Kidder, who saw these wares before the "slab-house" structure was discovered, pronounced them closely affiliated with the sherds found by himself.

² Morris.

This suggested ranking the samples in this group in ascending order by percentages of corrugated ware (Table IX). We have no proof for this series, except the foregoing indications, but offer it as a tentative suggestion.

It will be noted that following the wares of "slab-house" type, the value for corrugated ware jumps to 24 percent. If as we are inclined to believe, "slab-house" corrugated really constitutes 12 percent or more, the gap is not so great.

TABLE IX.

BLACK-ON-WHITE SERIES.

Site	Corrugated	White	Size of Sample
15	1-	99	67
14 a	2	98	208
b	2-	98	108
c	1-	99	188
7	2	98	87
50	2-	98	107
3	4	96	83
51	24	76	87
57	30	70	62
49	33	67	32
72	40	60	35
70	42	58	12
166	48	52	39
16	50	50	10
73	50	50	6
2	62	38	28
83	67	33	29
35	75	25	48

SUMMARY.

The sequence of pottery types suggested in the preceding pages may now be summarized. It is possible that the earliest remains in the region are slab-house sites with 96 to 98 percent black-on-white painted ware with 2 to 4 percent corrugated. (These figures may be 88 and 12 percent respectively, instead). Black-on-white painted ware then decreases from 76 percent to about 30 percent, while corrugated increases correspondingly.

Redware now makes its appearance, increasing to 43 percent. From zero to 14 percent it consists of black painted decoration; at the latter point black and white painted decoration appears as well. At about 20 to 25 percent glaze decoration appears; the additional decorations on redware introduced being black glaze, black glaze and white paint, black glaze and white paint on a red ground with black glaze on a white ground. Meanwhile corrugated decreases from 50 to 55 per cent to 30 percent, and whiteware decreases from 45 or 50 percent to about 20 percent, then rises somewhat to 27 percent. With the rise in whiteware, black glaze appears as a decorative technique as well as black paint. Probably buffware now begins to appear. At this point a hiatus in the data interrupts the sequence.

When the sequence is resumed, corrugated decreases from 14 percent to 0 or 6 percent on the surface of historic ruins and blackware makes its ap-

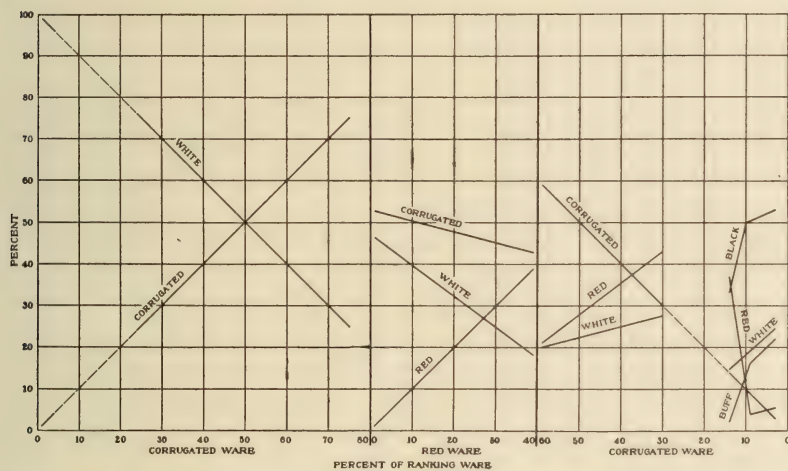


Fig. 6. Sequence of Wares, According to Ground Colors.

pearance at 33 percent increasing to about 50 percent. Redware reappears as the dominant type of painted ware, with identical decorative techniques, at 37 percent, but decreases rapidly to 4 percent, after which it remains stationary. Whiteware, including decorations in black paint, black glaze, and in addition black paint or glaze with red paint, reappears at 14 percent and increases to 23 percent. Buffware increases at the same time from 2 percent to 22 percent; decorations only in brown paint at first, then in brown and red paint, black glaze, and black glaze with red paint.

This sequence of types is shown graphically in Fig. 6. The division into groups has been retained, for, since we have no chronological unit the

percentages of the ware used in ranking each group must be used as the base for plotting. This method gives a rectilinear distribution for the ranking ware. The overlapping which appears between the several groups must be recognized as an expression of accidental variations.

Before discussing the hiatus in the suggested sequence it will be advantageous to point out the sequence of techniques corresponding to the ranking developed above. The data are given in Table X, in which the first group — the black-on-white series — is given in contracted form. The technical types are those recognized by Nelson for Tano pottery, except that biscuitware,¹ and Type IV, an historic two-color glazed ware do not seem to occur. On the other hand, a new type, a coarse plain blackware, which does not occur in the Tano ruins, is found here. We have found it necessary to separate two-color painted ware from three-color painted ware in Type I.

These results show no marked changes from the results obtained by ranking according to body color, yet are significant precisely on that account. Possibly corrugated ware rises from 1 percent to something less than 75 percent and then drops back to 30 percent. Correspondingly two-color painted ware decreases from 99 percent to about 50 percent and thence to about 35 percent. Three-color painted ware appears at the mid-point of the painted redware series, but never amounts to more than a few percent. Two-color glazed ware and three-color glazed and painted ware now appear together, but each as only 10 or 15 percent of the whole. Resuming the sequence after the hiatus, we find corrugated decreasing from 14 percent to 3 percent, blackware appearing at 33 percent and increasing to 50 percent, three-color glazed and painted ware decreasing slightly from about 16 to 6 percent, while the other wares remain stationary: two and three color painted wares at about 30 percent and two-color glazed ware at about 10 percent.

It seems legitimate to draw two conclusions from the foregoing: first, among the decorated wares the variations in decorative technique seem to have played a minor rôle in comparison with the variations in color combinations; and second, it is probable that glazed decoration was introduced rather suddenly into two-color and three-color decorative schemes in this region. These results are consistent with our previous findings.

¹ Kidder, (a), 454, says there is no biscuitware in the pottery from Hallonawa and Heshota'utilla at the Peabody Museum.

TABLE X.

SEQUENCE OF TECHNIQUES.

Corrugated Ware	Type I			Type II	Type III	Black Ware
	Two and Three Color Painted Ware			Two Color Glazed Ware	Three Color Glazed and Painted Ware	
	Two Color	Three Color	Two and Three Color			
1	99		99			
4	96		96			
24	76		76			
75	25		25			
45	55		55			
39	61		61			
35	65		65			
50	50		50			
65	35		35			
45	55		55			
56	44		44			
62	38		38			
55	45		45			
45	55		55			
48	52		52			
53	46	1	47			
60	37	3	40			
59	37	4	41			
53	45	2	47			
54	39	7	46			
48	50	2	52			
51	47	2	49			
35	65		65			
36	64		64			
50	46	4	50			
48	42	10	52			
38	59	3	62			
59	35	5	40	1		
54	33	9	42	2	2	
46	25		25	18	11	
46	28	3	31	10	13	
37	35	9	44	8	11	
36	57	6	63	1		
35	20		20	33	12	
30	51	16	67		3	

TABLE X.—(Continued).

Corru- gated Ware	Type I			Type II	Type III	Black Ware
	Two and Three Color Painted Ware			Two Color Glazed Ware	Three Color Glazed and Painted Ware	
	Two Color	Three Color	Two and Three Color			
12	27	16	43	11	13	21
19	8	12	20	11	15	35
9	20	6	26	11	19	35
12	23	12	35	7	16	30
12	21	12	33	6	19	30
15	20	16	36	5	10	34
13	20	15	35	4	6	42
14	18	13	31	3	17	35
11	12	7	19	6	24	40
16	15	8	23	8	4	49
12	18	3	21	8	11	48
10	19	2	21	11	8	50
8	21	6	27	7		58
15	26	7	33	11		41
13	38		38	8	20	21
7	24	4	28	2	2	61
7	9	5	14	14	14	51
12	18	6	24	9	6	49
8	22	9	31	8	4	49
4	20	12	32	9	2	53
5	28	2	30	7	12	46
3	24	11	35	6	3	53
4	21	7	28	14	7	47
2	28	3	31	14	5	48
1	37		37	8		54
3	26	3	29	12	7	49

For comparison, Nelson's table for San Cristobal pueblo ² is given below, the values having been reduced to percentages. The wares appear in the Tano region in the order two and three color painted wares (Type I), two color glazed wares (Type II), three color glazed and painted wares (Type III), historic two color glazed wares (Type IV), and modern painted wares (Type V), accompanied at all times by corrugated and biscuitware. The order for decorated wares (other than plastic decoration) in the Zuñi region is evidently much the same: two and three color painted wares (Type I),

¹ Average of surface samples of Sites No. 13, 45, and 48.

² Nelson, 166. The fluctuation in corrugated ware would appear to be as marked as that in any other type.

Thickness of Section	Corrugated Ware	Biscuit-ware	Type I	Type II	Type III
1st ft.	37	7	1	52	3
2nd "	31	4	1	62	2
3rd "	15	1	6	76	2
4th "	21	3	5	71	
5th "	17	4	1	78	
6th "	19	5	2	74	1-
7th "	23	4	18	55	
8th "	25	1	52	22	
9th "	46	1-	53	1	
10th "	55	1-	45		

two color glazed wares (Type II), three color glazed and painted wares (Type III), and modern painted wares (Type V). Biscuitware and an historic two color glazed ware (Type IV) do not appear, but a new type, blackware, appears after Type III. The principal difference would seem to be, so far as our data show, in the tendency to use painted rather than glazed wares in the Zuñi region. Glazed wares (Types II and III) appear at about the same period in this region and never attain prominence. It may ultimately be necessary to qualify the last statement, if, as we suspect, three color glazed and painted ware played a more important rôle in that section of the sequence represented by the hiatus in our data.

The sequence given by Morris for the upper San Juan Valley ¹ parallels both Tano and Zuñi sequences in general outlines. It approximates the Tano more closely than the Zuñi, but the finer discriminations among the earlier wares show a close kinship to the Zuñi wares of the same period.

It is now possible to suggest definitely what the characteristics of the missing data should be. The sequence here should show a decrease in corrugated from 30 to 14 percent, and another in whiteware from 27 to 14 percent. Redware would be the dominant decorated ware, decreasing only slightly from 43 to 37 percent. Buffware would probably not amount to more than a few percent. Blackware would appear in this group and attain a proportion of 33 percent. The changes in technique which may be expected would not be great: a decrease in Type I from 35 to 20 percent, with Types II and III remaining at about 10 or 15 percent, but possibly with a rise and fall in Type III.

¹ Morris, 27.

MOVEMENTS OF POPULATION.

With an outline of the sequence of pottery types at hand, it is now possible to speak of the time-relations between the ruins.

In spite of the limitations on the occupation of the Zuñi region imposed by its natural resources, certain general shifts of population have taken place. While the number of localities with optimum conditions for producing food and water is strictly limited, the wide scattering of former habitations throughout the region is strong evidence for the latent possibilities of the whole. Nevertheless, the advantages of these localities are so marked that they have been the scene of repeated settlements. But the striking feature of these settlements is their transitory character. Ash heaps, as we have repeatedly stated, are a minus quantity; the fact which determined the course of this inquiry. It is certainly startling to come on ruin after ruin with long rows of rooms stretching away in straight lines or graceful curves, but with hardly a sign of ashes and broken pottery — in short, every jot of evidence pointing to a fitting occupation. The natural result has been to produce a constant movement about in the valley, a sort of milling around. It is somewhat curious to find nevertheless that the center of population has shifted from period to period.

The fact is brought out by grouping the ruins furnishing the data for the foregoing sequence. For convenience of comparison four periods are chosen corresponding to the four general groups of pottery types. The location of the ruins is shown in Figs. 7 to 10. In addition, Mr. Nelson has placed at my disposal sherds and data from ruins as far east as Acoma, south to the Rito Quemado and west to St. Johns, Arizona, some of which undoubtedly belong with the ruins in the central region.

The oldest group is shown in Fig. 7. Ruins with pottery of the "slab-house" type have been differentiated from those with black-on-white painted ware and corrugated of the ordinary type. The ruins are not localized, but are scattered through the Zuñi Valley and occur occasionally outside. Outside of the area shown, several were found along the eastern border of the great lava sheet in the Cebolla-Cebollita valleys, several west of Atarque as far as Ojo Bonito, and again at Springerville and St. Johns on the Little Colorado. Some of these, as for example, at St. Johns, are probably slab-house structures, although the reconnaissance data do not make this certain. At Sites 14 and 7 in the Ojo Caliente district there are evidences of slab-house *villages*.

In the second group ruins with less than 14 percent redware are differ-

entiated from those with 14 percent or more (Fig. 8). It will be remembered that this point marked the beginning of three-color painted ware. It also proves a significant point of division with regard to distribution. The group as a whole is scattered through the valley from the Ojo Caliente district to Inscription Rock and a number of sites appear on the plateau. But the distribution of the ruins, most of which are small, shows a different focus of occupation for the two classes. Ruins with less than 14 percent

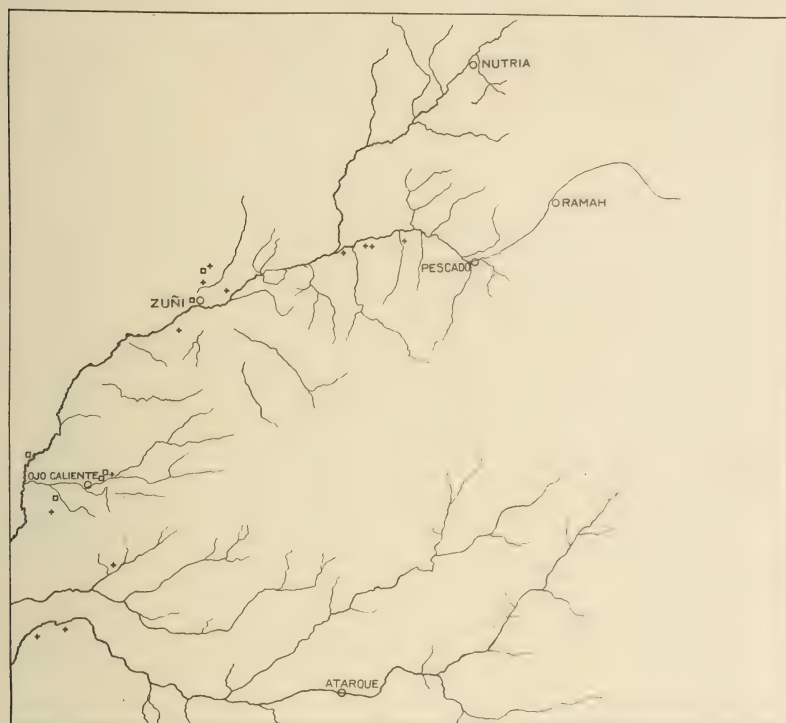


Fig. 7. Location of Ruins: Black-on-White Series. Squares, slab-house type; crosses, black-on-white type.

redware center in the Ojo Caliente district while relatively few are located up the valley. Outside of the area shown, they lie principally along the eastern side of the great lava sheet south to the Point of Malpais and several occur near Acoma. Three near Rito Quemado suggest Tularosa influence. On the other hand, ruins with more than 14 percent redware center from the Pescado district (where there are undoubtedly more than shown) through Ramah to Inscription Rock. A number are in the Zuñi district and fewer near Ojo Caliente. Similar ruins also occur in the Cebolla-Cebollita valleys north of the Point of Malpais and one further east in the

Acoma Valley. Four lie within ten miles west of Atarque, but all except the easternmost suggest affiliations with Tularosa wares rather than with Zuñi. The same is true for three ruins just south of Springerville. A shift in the center of population undoubtedly occurred during this period. The inauguration of pueblo architecture which accompanied it will be referred to later.

Ruins where glazed pottery was in use center about Pescado, Ramah, and

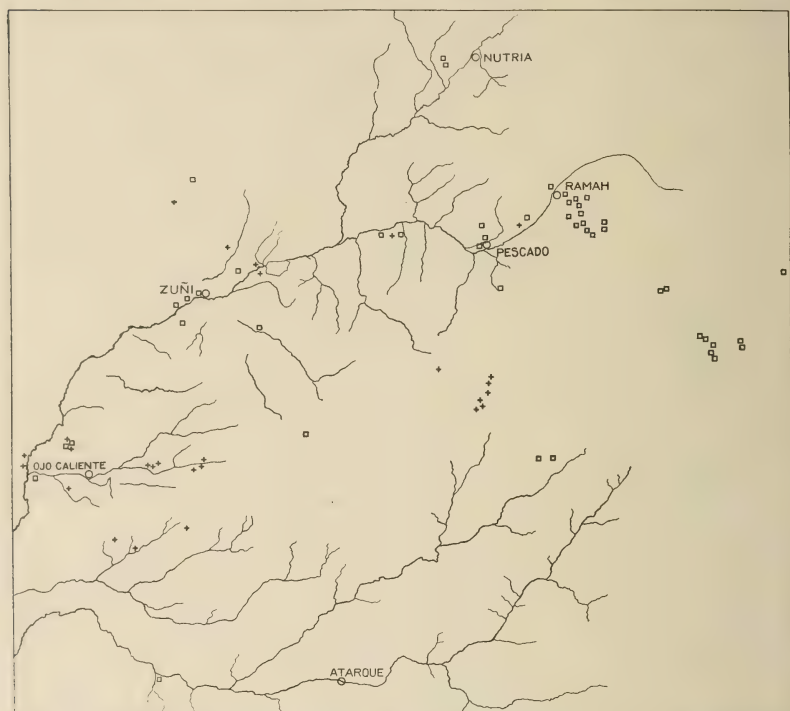


Fig. 8. Location of Ruins: Painted Ware Series. Crosses, two-color painted ware squares, three-color painted ware.

in the Inscription Rock section (Fig. 9). Only three lie further down the valley. More are situated on the Plateau to the south, but some of these (at Ojo Hallado, Ojo Pueblo, and at the Delfin Chavez ranch) strongly suggest Tularosa wares. There are four or more east of Springerville, but again Tularosa affiliations are suggested by one. Finally, several ruins to the east near Cebollita are of the same type.¹

¹ Hodge in the *Annual Report of the Smithsonian Institution* for 1914 (46), refers one of these ruins tentatively to the Tangi, or Calabash, clan of Acoma. This does not seem likely since pottery from a ruin probably identical with this one bears a marked similarity to that of the Zuñi Region.

The last group (Fig. 10) is that of the late and historic ruins. They center down the valley again, near Zuñi and Ojo Caliente, where the occupants of the region were discovered by the Spaniards of the sixteenth century. We have distinguished the post-Conquest refuge villages on the map, and it will be seen that they too cluster in the same regions. Not a single ruin of this period lies in all the country between Zuñi and Acoma, for all of which we have information. Thus, another change in the focus of occupation is indicated, a change in the opposite direction. It will be

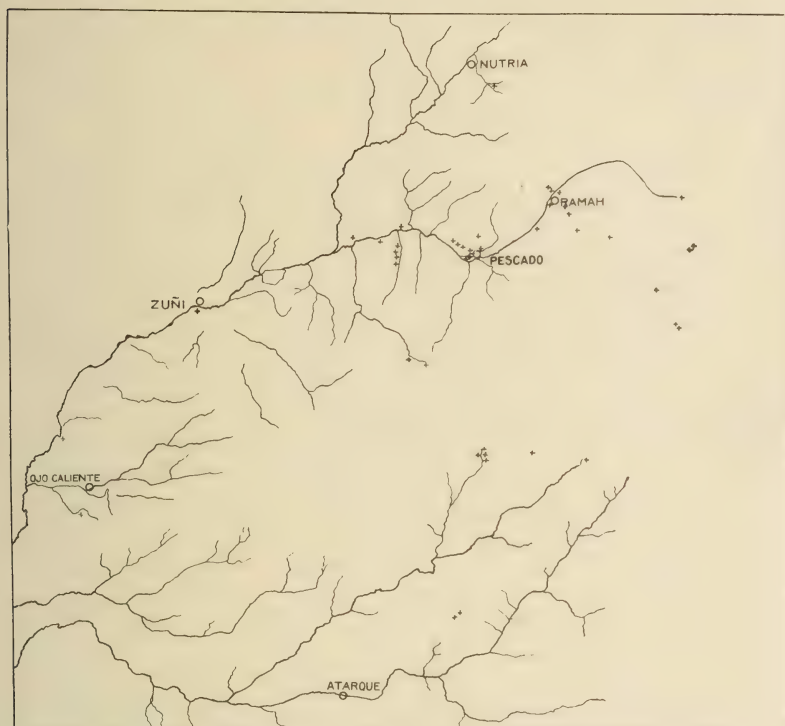


Fig. 9. Location of Ruins: Glazed Ware Series.

remembered, however, that despite the similarity of the wares there is a hiatus in our data between the group of "glaze" sites and these late and historic ruins. No ruins with wares which would fill the hiatus in the pottery sequence lie within the bounds of this region. This gap accompanied by a shift in the center of population would inject a very strong element of doubt into the postulated relations between the late sites and "glaze" sites were not the specific points of similarity between the wares of the two groups so remarkably close.

We have at hand some suggestive data on the point. No ruins of this period lie east of Zuñi, but along the Little Colorado to the west are a number affiliated with these. Two small ruins on the west bank of the Little Colorado about three hundred and five hundred yards above the bridge at St. Johns show sherds identical with those of Pinnawa (No. 33). Three others are also of the Pinnawa type but probably slightly earlier: the first, a small pueblo ruin on a rock by the Little Colorado about four or

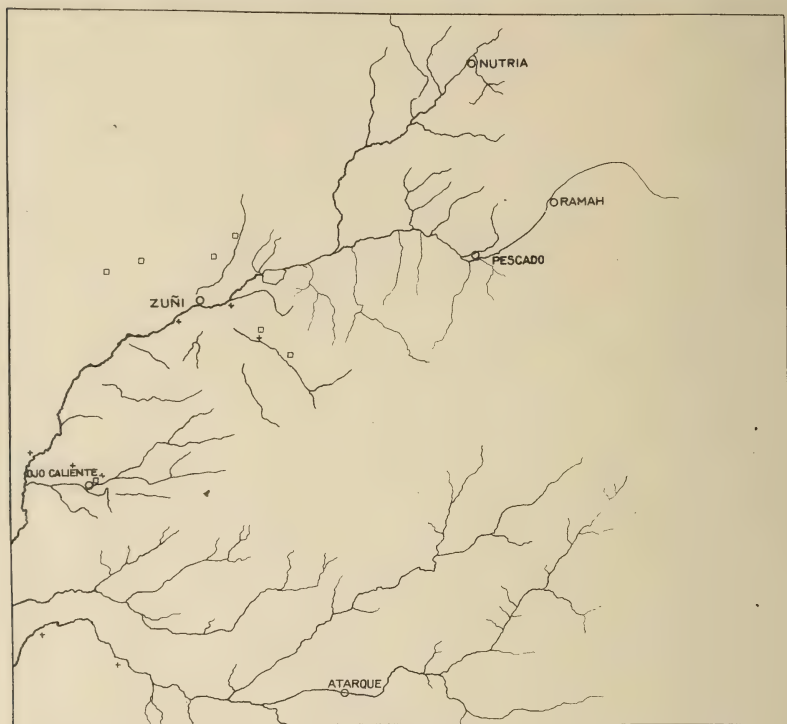


Fig. 10. Location of Ruins: Late and Historic Sites. Crosses, late and Conquest pueblos; squares, post-Conquest refuge villages.

five miles below Springerville; the second, a pueblo ruin at Ojo Bonito, ten or twelve miles due south of Ojo Caliente, and the third, a rectangular pueblo ruin about five miles southeast of Ojo Bonito on the road to Atarque.

These specific data based on sherd collections point to the west and so do all published material available. The descriptions by Fewkes and Hough of ruins and pottery in the Little Colorado Valley are fairly full and admirably illustrated. There can be no doubt that some of these ruins bear a close relation to those we have been discussing and in particular we would point out the following ruins where the essential similarity of the pottery

has been emphasized by both investigators. Beginning on the east, these are the "Stone Axe" ruins in the Petrified Forest, along the Mogollon Rim possibly those at Pinedale and Shumway on Showlow Creek should be included, "Four Mile" ruin near Taylor on Silver Creek, and along the Little Colorado, the Chevlon ruin fifteen miles east of Winslow and the Homolobi group of ruins near that town. Possibly we should include the Biddahoochee ruins north of Holbrook, but the decorative style of wares there stands somewhat apart from the others. In these ruins redware predominates, redware with decoration in black or black and white, painted or glazed or both, which is a unit with the wares from Hallonawa and Hecota'utlla figured by Fewkes in the Putnam Anniversary Volume. The essential difference between them is in the presence of a yellowware, not the "fine yellow ware" of the Hopi,¹ but the buffware of the Zuñi historic pueblos. We cannot but doubt the dictum which populates these pueblos with Hopi clans on the say-so of native informants in the face of the demonstrably close similarities between these wares and their Zuñi counterparts. It remains to be demonstrated that the Hopi wares have evolved from these. The question is still open and will never be settled by the tacit denial of historical relief and by arrogating all variations and combinations of pottery styles to the principle of clan mingling.

It is suggested then that the ruins constituting the hiatus in our sequence lie down the valley of the Little Colorado, of which the Zuñi River is a tributary. If it should ultimately prove that there was actually a movement of population eastward through this valley to the location of historic times, the fact might also demonstrate that there was no hiatus in the sequence but that we have been dealing here with the segments of two sequences which may, or may not, be of independent development. However, it must be noted that these ruins of the Little Colorado mark the western limit of the area of glaze decoration, and further, that a sequence of these ruins would be expected to begin about where the ruins of the eastern Zuñi Valley leave off. An actual continuity of occupation of the Little Colorado Valley is therefore not beyond the range of probability, but the problem merges here into that of the glaze area as a whole.

One final qualification must be placed on the sequence as a whole. It may be ultimately proven, as suggested by the marked similarities between the data for this region, the Tano country and the Upper San Juan, that there has been a parallel development over a large section of the Southwest. In that event, the several segments of our sequence may be found to be disparate parts of the general scheme and only artificially placed together here; but this point cannot be answered on internal evidence alone.

¹ Fewkes, (b), 59; see also 61, 64, 69, and 73 for other differences.

POTTERY TYPES.

The sequence of pottery types has been developed in the preceding sections. Some further data on the wares themselves are available for a consideration of the pottery art simply as a cultural trait. As no extensive excavations were made, there are few whole vessels in our collection. This sets a definite limit on the description of the wares, but the deficiency of material is made up by a large sherd collection.

The descriptions which follow mark significant points in the sequence outlined above. The practical limitations imposed by the material made it necessary to select wares in ruins offering, first, large random collections of sherds the analysis of which placed the ruin definitely in the series, and second, collections of large sherds which would adequately represent the wares involved. Only *typical* designs are shown, the result of laborious grouping of the sherds, and their respective prevalence is indicated. The proportion of bowls to jars is also given, but it must be kept in mind that dippers are not easily separated from bowls on the basis of sherds. In view of the fragmentary evidence offered by the collection it does not seem advisable to attempt a description of the structural technique—paste composition, etc.—with the exception of the brief note on the “slab-house” wares of unusual interest. The order of description follows the sequence above.¹

BLACK-ON-WHITE SERIES: 1-4 PERCENT CORRUGATED (SLAB-HOUSE TYPE). SITES 14 AND 40.

Corrugated. Medium-sized jars with plain globular body from which springs a straight neck bearing unusually broad coils² (Fig. 11a). The coils are frequently obliterated in part (Fig. 11c) or entirely erased and then reindicated by incised lines (Fig. 11b). Plain vessels without coils are not common (Fig. 11d and e) but they differ from the above only in that respect. The surface is rough.

Black-on-White. Bowls are somewhat more common than jars. Vessels

¹ In the illustrations the ground colors of the sherds are not indicated: the painted and glazed decorations are indicated as follows: black by solid black areas; white by dotted areas; brown by hatched areas; and red by areas of broken hachures.

² A similar vessel from St. George, Utah, is figured by Holmes (Fig. 242).

are small and medium-sized with rather thin walls: rims are simple and straight. A thin-walled type which prevails contains a very large proportion of tempering material — chiefly sand, sometimes crushed stone. The

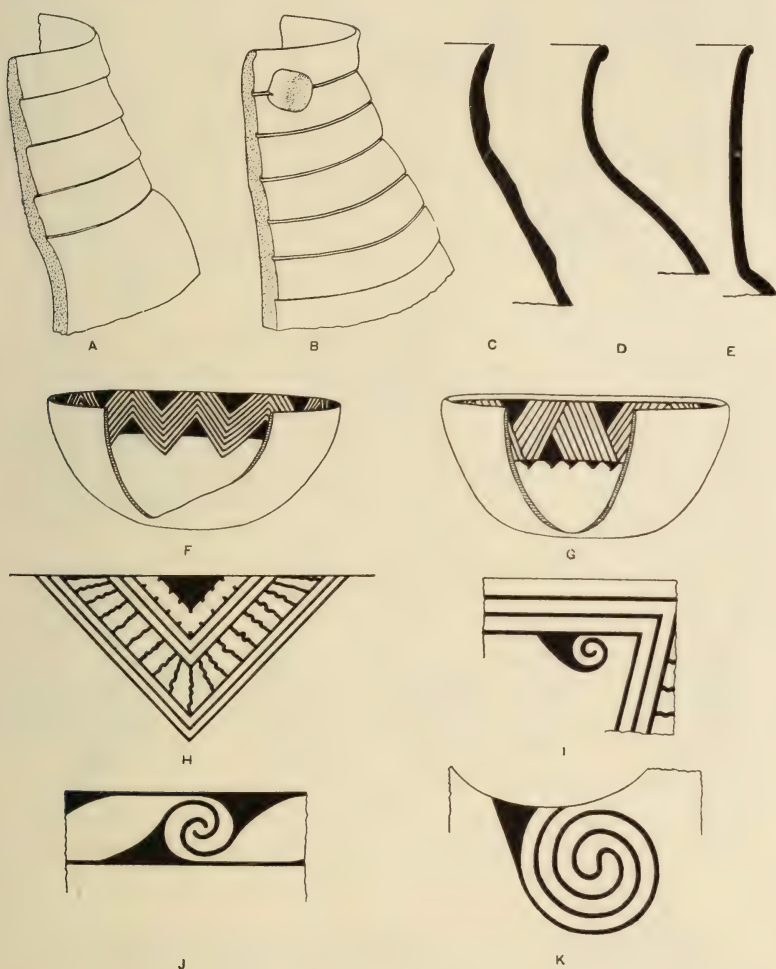


Fig. 11. Pottery of Black-on-White Series: 1-4% Corrugated. a-e, g-k, Site 14; f, Site 40; f-j, bowls; a-e, and k, jars. a, c-e, h-k, $\times \frac{1}{2}$; b, $\times \frac{3}{8}$; f, 8 in. diameter; g, 5½ in. diameter.

thicker-walled type has a fairly homogeneous smooth paste. Both types have a relatively rough surface finish, but in the thin-walled type the thin bluish white slip fails to cover the coarse tempering material. Bowls are

decorated only on the inside. The decorative units on bowls, and perhaps on jars, are pendent from the rim, whether they occur as independent units (Fig. 11h) or in bands or panels (Figs. 11f and g). The commonest unit is the pendent triangle (Fig. 11f). This general type of decoration is modified by the use of secondary triangles (Fig. 11g), by line-bordering dots (Fig. 11h), by bands of wavy lines (Fig. 11h), or by the single or hooked spirals. These also occur on a few sherds as independent units (Fig. 11i and j). A double spiral occurs pendent from the rim of a jar (Fig. 11k). Similar double spirals with the enclosed areas filled in with wavy lines also appear. Most bowls and some jars show a black line on the rim.

PAINTED WARE SERIES: 2 PERCENT REDWARE. SITE 24.

Corrugated. One-sixth of these sherds bear plain broad coils with a smooth vessel body reminiscent of the slab-house type. The remaining sherds bear narrow corrugations, both indented and plain, in the proportion of three to one. A few sherds show both plain and indented coils. Few, if any, of these vessels had smooth bodies.

Black-on-White. Bowls constitute three-fifths of the forms. Bowls commonly have a black line along the rim similar to that on the corresponding slab-house type. The principal decorations consist of areas cross-hatched with fine lines in bold rectangular patterns (Figs. 12a and b). Occasionally checker-board effects (Fig. 12c) and panels of parallel lines (Fig. 12d) occur. Jars present the same style of treatment, the commonest design (Fig. 12c) being a cross-hatched stepped figure running diagonally across the jar. The dot-bordered triangle occurs occasionally (Fig. 12f).

Black-on-Red. Sherds of this type are too few for characterization.

This description fits the black-on-white series fairly well. Small samples and small sherds made it impossible to treat a typical collection from that series.

PAINTED WARE SERIES: 10 PERCENT REDWARE. SITE 164.

Corrugated. Usually the whole vessel bears narrow corrugations except for short plain flaring rim. The typical vessel has indented coils, few plain coils, and a few others show a combination of plain and indented coils. One sherd bears a curious checker-board pattern of alternate plain and indented areas. Additional ornamentation occurs in the form of small spiral coils applied to the exterior surface (Fig. 18c).

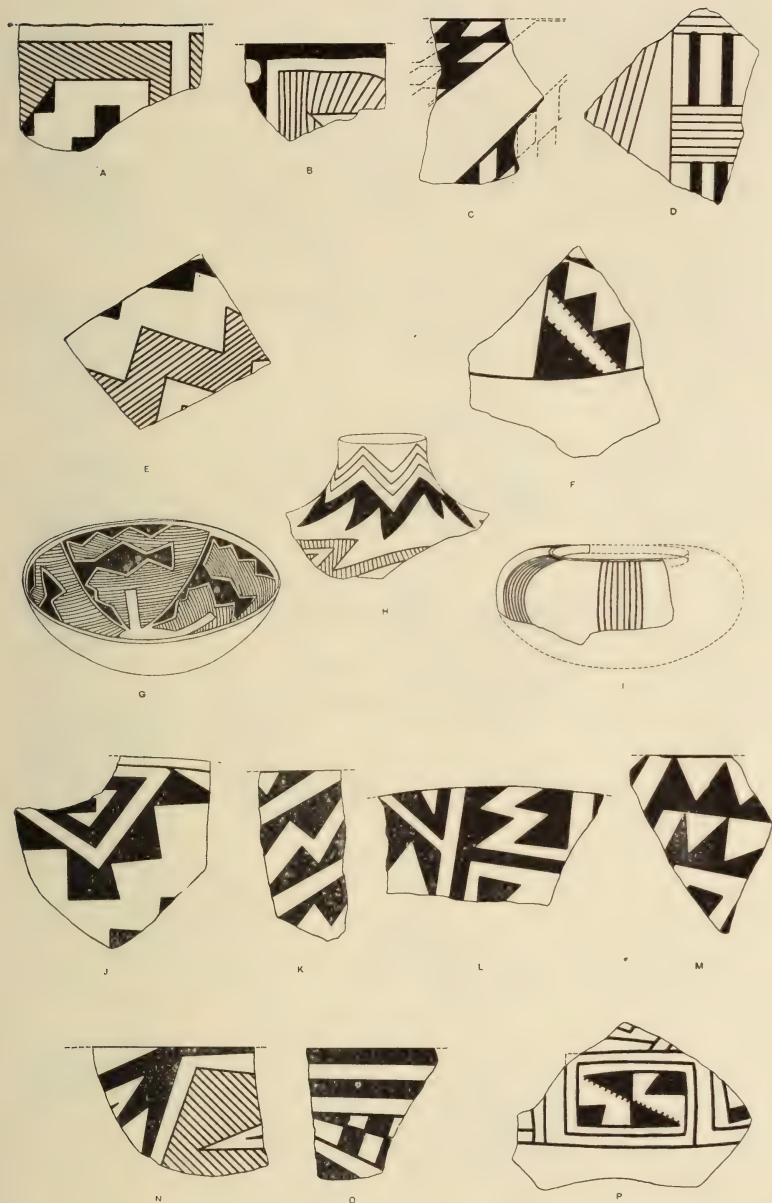


Fig. 12. Pottery of Painted Ware Series: 2% Redware (a-f) and 10% Redware (g-p). a-f, Site 24; g-p, Site 164. a-d, g, j-o, bowls; e, f, h, i, and p, jars. a, b, e, i and j, $\times \frac{2}{3}$; c, d, f, k-o, $\times \frac{1}{3}$; h and p, $\times \frac{1}{15}$; g, $\times \frac{2}{15}$.

Black-on-White. Jars constitute four-fifths of this class, bowls and a few, dippers, the remainder. The uniform thickness of the bowls with edges finished square-across is noteworthy. A marked change appears in the style of decoration. Unlike the fine-line designs of the earlier black-on-white series, the designs are executed in broad lines (Fig. 12j-m) making great use of triangular areas and interlocking triangular figures of the step type. Combinations of fine-line and broad-line designs are less common (Fig. 12g and n). Occasionally the checker-board pattern occurs with a broad-line pattern (Fig. 12o). Jar patterns are more clearly reminiscent of the earlier black-on-white series. The prevailing pattern (Fig. 12h) suggests a juxtaposition of broad-line and fine-line areas in step figures running diagonally across the vessel, but the figures usually contain more acute angles than corresponding designs of the earlier series. Occasionally panel decorations involve the dot-bordered triangle (Fig. 12p).

Black-on-Red. Nine-tenths of these vessels are bowls. Both bowls and jars have a community of decoration with similar vessels of black-on-white ware. One fragmentary small bowl (Fig. 12i) bears a unique decoration.

PAINTED WARE SERIES: 30 TO 32 PERCENT REDWARE. SITES 86 AND 96.

Corrugated. Vessels are normally entirely covered with narrow corrugations even to the very edge of the flaring (?) lip. The indented coil prevails; plain as well as combined plain and indented coils are relatively rare.

Black-on-White. There is very little variation in the designs applied to black-on-white, black-on-red, and black and white-on-red wares. All of the designs figured (Fig. 13a-i) are common. Two-fifths of the black-on-white vessels are bowls; with these are a few dippers. A characteristic decorative treatment is shown in Fig. 13a. Jars show the same general style of treatment (Figs. 13b, c, and e). Fine line hachure work is conspicuously absent.

Black-on-Red. Two-thirds of the sherds are from bowls. The common bowl (Fig. 13g) and jar (Fig. 13h) decorations closely resemble those in black-on-white.

Black and White-on-Red. Only bowls are represented, not a single jar sherd being found. This type of ware has long characterized the Zuñi region in museum collections. Its distinctive features are pronounced. The bowls are commonly decorated in black on the inside and in white (Fig. 13d and f) or black and white (Fig. 13i) on the exterior surface. The interior decorations are usually panels extending over the whole surface. The area is rather closely filled with broad-line and hachure figures interlocking. The exterior decoration is open and delicate, consisting of angular



Fig. 13. Pottery of Painted Ware Series; 30-32% Redware. a-i, Sites 86 and 96. Pottery of Glazed Ware Series. j-r, Site 146. a, d, f, g, i-k, m, o, p and r, bowls; b, c, e, h, and q, jars; l and n, dippers. e, d, f, i-r, $\times \frac{1}{3}$; b, c, g and h, $\times \frac{1}{3}$; e, $\times \frac{1}{2}$.

meanders or rectangular panels extending only about half-way down the side but encircling the bowl.

The similarity of decoration in black paint in all three wares is perhaps closer than the sherds illustrated show. The decoration of the exterior of the bowls in white paint shows a different stylistic treatment.

GLAZED WARE SERIES. SITES 81 AND 82.

Corrugated. Indented narrow corrugations covering the vessel with the exception of the plain rim mark the prevailing form. A few sherds show plain coils, without indentations.

Black Paint-on-White. Bowls comprise one-third of this ware.

Black Paint-on-Red. There are twice as many bowls as jars of this ware. A typical example of broad-line work (Fig. 14b) shows panels of triangular helices.

Black and White Paint-on-Red. Only one vessel in ten is a jar. The characteristic decoration of the interior of the bowl is in black, of the exterior in white (Fig. 14a) and less frequently in black and white.

The sherds from these ruins bearing glaze decoration are too few for characterization.

GLAZED WARE SERIES. SITE 71.

Corrugated. The typical vessel is entirely corrugated except for a short distance at the rim. The coils are characteristically narrow and indented, but sometimes plain or both plain and indented together.

Black Paint-on-White. Jars constitute seven-tenths of this group; the remainder bowls and a few dippers. The decoration is much like the earlier wares of the same type: broad-line designs being rather prominent. Figs. 14c-f are equally common. The black paint is sometimes of a brownish or purplish-brown tinge.

Black Paint-on-Red. Three-quarters of the vessels decorated in black paint-on-red are bowls. The designs on both bowls and jars are not novel (Figs. 14i and 14g, respectively).

Black and White Paint-on-Red. No jars of this type were found. Patterns on these bowls do not differ from those on similar wares from earlier ruins (Figs. 14h and j). The usual color combination is black paint-on-red inside of the bowl and white-on-red outside. Less commonly, the interior is covered with white paint bearing the design in black and with the exterior a plain red.



Fig. 14. Pottery of Glazed Ware Series: Sites 81, 82 and 71. a and b, Sites 81 and 82; c-j, Site 71. a, b, h-j, bowls; c-g, jars. a, $10\frac{1}{2}$ in. diameter; b, 5 in. diameter; c-j, $\times \frac{1}{2}$.

Black Glaze-on-Red. Bowls and jars in the relation of seven to three.

Black glaze-on-white and other combinations as black glaze-on-white inside with plain red outside, and black glaze and white paint-on-red inside with black and white paint-on-red outside also occur infrequently.

GLAZED WARE SERIES. SITE 149.¹

The following description is furnished not by a surface sample but by a relatively small sample from the uppermost six-inch level of the ash-heap. The sherds figured (Fig. 15) are all from the surface, however.

Corrugated. All sherds bear narrow indented coils, except from the plain rim section.

Black Paint-on-White. One-fourth of the vessels are bowls. The black paint is commonly quite brown, having a "washed out" appearance. No new type of decoration appears on either bowls or jars, with the exception that diagonal step patterns are not nearly so common on the latter as designs more of the bowl type (Fig. 15a and c). Occasionally, bowls are decorated both inside and out.

Black Paint-on-Red. Bowls are half again as common as jars. No new features of design in this type appear at Inscription Rock.

Black and White Paint-on-Red. Only bowls were found. The designs are similar to the earlier examples. Beside the usual combination of black-on-red inside with white-on-red outside (Fig. 15d) there are also sherds showing the same interior decoration but both black-and-white-on-red on the exterior (Fig. 15e).

Too few glazed pieces occur in the ash heap sample for descriptive purposes. Nevertheless, a number of examples of this style of decoration from the surface collection are shown (Fig. 15f-m). The commonest decoration is in black glaze-on-red inside with white paint-on-red outside (Fig. 15f). Similar sherds, about as common, have both black glaze and white paint-on-red outside instead (Fig. 15h-j and l). Red bowls, decorated in black glaze and white paint outside, but coated white inside, on which designs in black glaze have been applied (Fig. 15g and k) are frequent. Other combinations are black glaze-on-white inside the bowl with a plain red exterior (Fig. 15m); red bowls with black glaze within and black and white paints outside; black glaze-on-red inside and on large areas of white outside. Bowls seem to be most abundant and to bear the simpler line designs as a rule; the jars are decorated in black glaze on white areas applied to the red ground of the vessel.

¹ Cf. Simpson, Pl. 64.

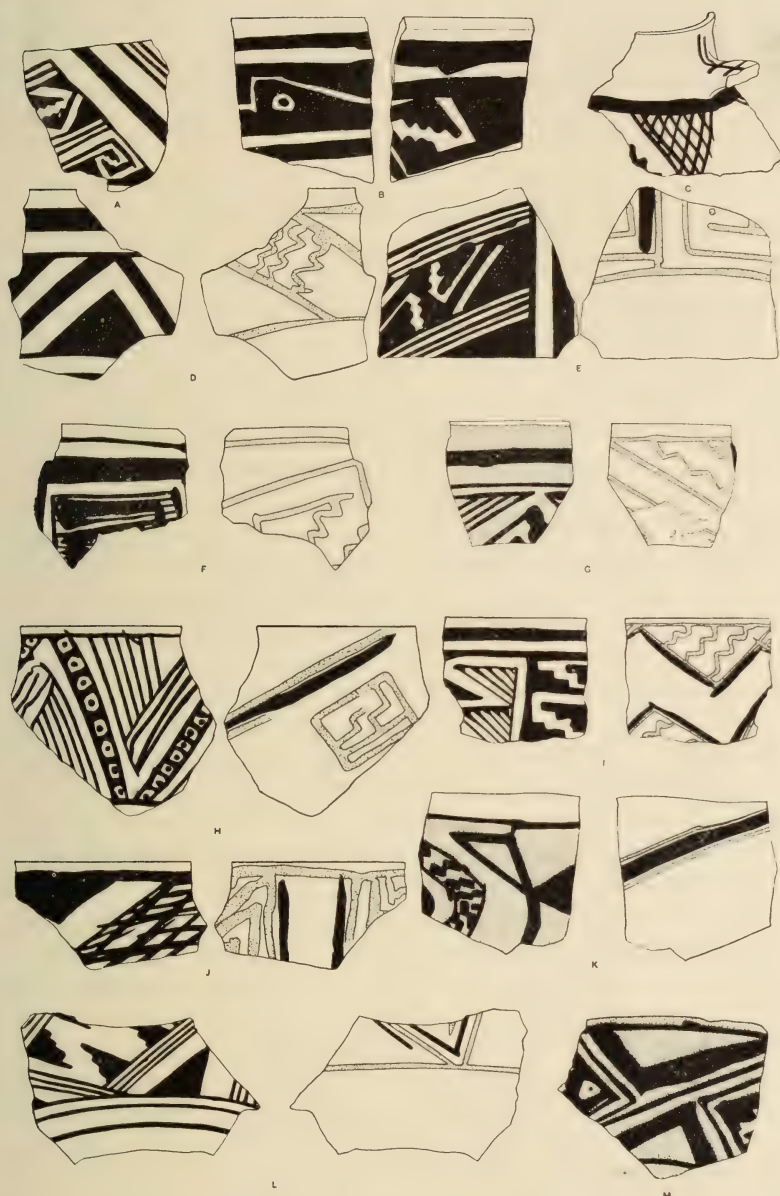


Fig. 15. Pottery of Glazed Ware Series: Site 149. a and c, jars; b, d-m, bowls. a-m, $\times \frac{1}{3}$.

It must be remarked in passing that black glaze sometimes appears as vivid green when passing over a white ground but attains a characteristic black where the same line strikes the red ground color of the vessel. This has already been pointed out by Dr. Kidder. We have considered all such greens, brownish greens, etc., as black, as they really are.

GLAZED WARE SERIES. SITE 146.

Corrugated. The corrugated ware is the usual type of jar entirely covered with narrow indented coils except for a plain flaring rim.

Black Paint-on-White. Two-thirds of the sherds are parts of jars, and there are a few dipper sherds. Bowls are decorated on the inside in a rather free style (Fig. 13k). The usual dipper design shows the interlocking key figure (Fig. 13 l and n). The jars sometimes show bold curvilinear forms using alternate areas of broad-line and hachure figures.

Black Paint-on-Red. Bowls number three-fifths of the whole. They have plain straight rims and are rarely decorated on the exterior surface. The painted designs resemble those in black on white: the same is probably true for the jars. Fig. 13p is a characteristic bowl pattern.

Black and White Paint-on-Red. Jars are represented by an occasional sherd only (Fig. 13q). Like the bowls decorated in black paint alone, the bowls of this type have plain rims. As at all other sites, the commonest color combination of the bowls is black paint-on-red inside with white-on-red outside (Fig. 13j, m, and o). Occasionally, a variant with white as well as black paint on the inside of the bowl appears (Fig. 13r): Besides the common designs figured, a less common pattern consists of the familiar interlocking steps of broad-line and hachure areas. Occasionally, the outside white designs involve the hooked spiral figure.

There are too few glazed pieces for adequate description, but it can be said that they closely resemble the painted sherds in decorative execution. The description of the same types of wares at Site 149, Inscription Rock, applies equally well here.

The wares we have been describing for several sites in the glazed ware series are equally characteristic of all of the sites. They have a decided individuality which has long been recognized. So far as our sherd collection shows there is no means of separating examples of one type of ware from one ruin from those of the same type from another ruin. Where the mixture of pottery from two ruins in the Hemenway Collection accidentally occurred, as is well known it was found impossible to separate them again. Dr. Fewkes has published on this combined collection from Hallonawa and

Hecota'utlla.¹ The vessels figured by him are characteristic and admirably illustrate both design and color schemes, save that we suspect that the red are printed in too light a shade. Our sherd collection would indicate, however, that at Hecota'utlla at least an adequate collection would include quite a few red vessels with large white areas decorated in black.

LATE AND HISTORIC SITES. SITE 33.

Corrugated ware and painted wares of black-on-white, black-on-red, and black and white-on-red varieties at this site, Pinnawa, differ not at all from similar wares elsewhere. Even a variant with white paint only on the exterior of a red vessel (Fig. 16k) is clearly of the same type. The same is true for two-color glazed wares, black-on-white and black-on-red (Fig. 16j), and it is particularly significant that even so highly specialized a ware as three-color glaze shows identical patterns in redware decorated in black glaze or black glaze and white paint on the interior and with white paint alone or with white paint and black glaze on the exterior (Fig. 16 l-o). There is a certain community of these wares with those described from the earlier ruins. It is rather startling then to find wares of different type which, as has been stated in a previous section, bear decided affinities with pottery from ruins down the Little Colorado.

Blackware. Sherds of this type are identical in character with those of the Zuñi cooking vessels of today. The ware is undecorated, dull, lacking a slip, rather rough and usually black, although often a dirty brown or gray. Their form was probably that of the larger jar and "slipper" pot of today.

Black and Red-on-White. All types of decoration in black and red on white, both painted and glazed, are more plentiful in the lower levels of the Pinnawa ash heap than near the surface. The type uniformly presents a dead white ground bearing brilliant red lines (but sometimes brownish) together with black paint or black glaze. White bowls are decorated on interior and exterior with black and red paints (Figs. 16a and e) or on the interior only (Fig. 16b). Red bowls occur with black and red paints on a white ground on either exterior or interior and in the latter case with or without white lines on the exterior. The patterns in glaze are identical: black glaze and red paint on a white ground, either of a white jar (Fig. 16c) or bowl (Fig. 16d, f-h) or one of redware bearing a white ground (Fig. 16i). The character of the lines involved in these patterns is quite different from those on sherds of other wares. These seem very sketchy.

¹ Fewkes, (c); also Matthews, 151 and 153.

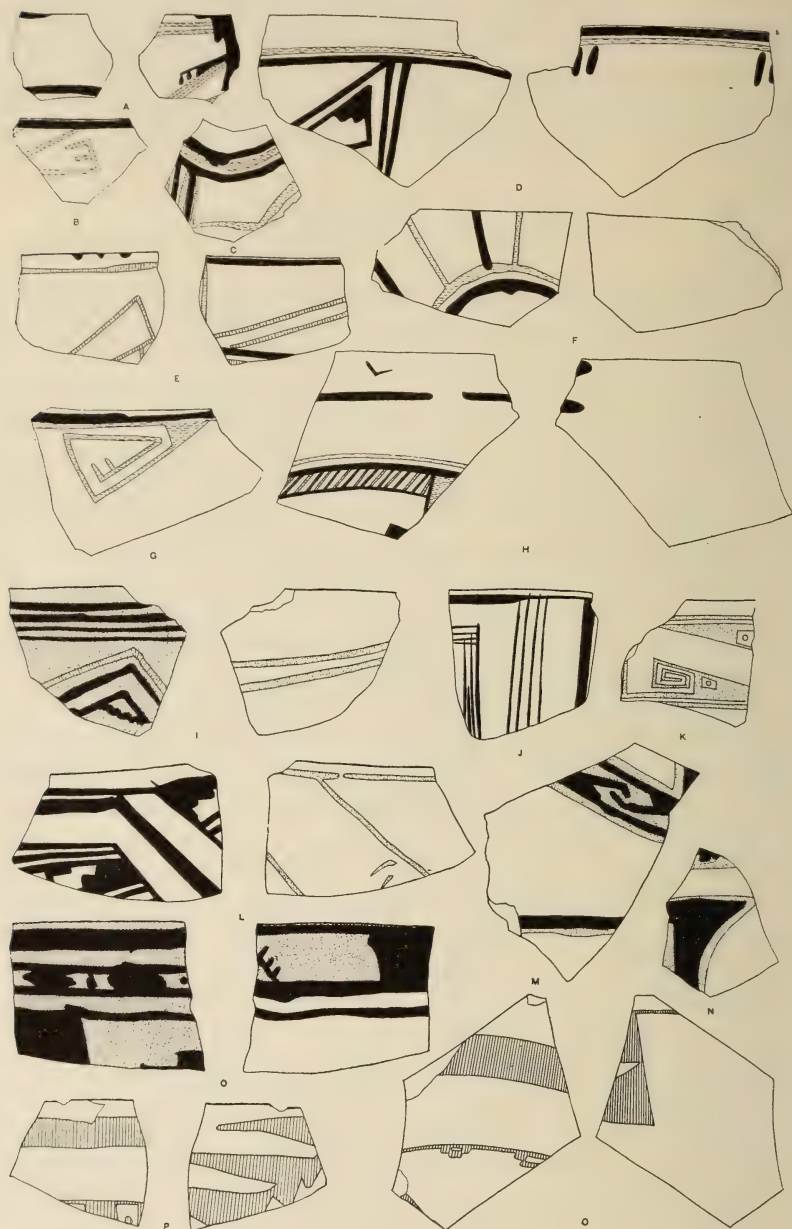


Fig. 16. Pottery of Late and Historic Sites: Site 33. a, b, d-l, o-q, bowls; c, m, and n, jars. a-q, $\times \frac{1}{3}$.

Some of the sherds figured are from the ash heap: d, 1 foot 6 inches deep; a, b, and e, 4 feet 6 inches; g, 5 feet; c and i, 5 feet 6 inches.

Brown Paint-on-Buff. Buffware ranges from lemon yellow to deep salmon in color. It is usually pale and lacks depth of color. It would not be confused with the fine Hopi yellow. The brown paint, employed usually in broad lines and areas (Fig. 16p and q), is also light. Besides brown-on-buff, brown-bordered red areas are also patterned on a buff ground. A single sherd shows black paint-on-red on the inside of a bowl with red paint-on-buff outside.

LATE AND HISTORIC SITES. SITE 48.

The wares from Site 48, Mattsakya, are identical with those of Pinnawa. The sherds of the upper levels of the Pinnawa ash heap cannot be distinguished from those at the base of its Mattsakya counterpart. The sherds illustrated (Fig. 17) clearly bring out this point. A bowl sherd decorated in black glaze-on-white (Fig. 17a) shows the influence of the black and red-on-white designs. Black and red-on-white ware is less plentiful in the upper parts of the Mattsakya ash heap than in the lower; a condition similar to that at Pinnawa. Both black paint (Fig. 17e) and glaze (Fig. 17c) were used. Only a small amount of redware appears here and that was somewhat roughly executed when glaze was used (Fig. 17b, f, j and l), although the patterns are of the familiar type. About one-quarter of all the sherds are buffware. Occasionally, these bear decorations in black glaze (Fig. 17k), but the common design is in brown alone (Fig. 17d, g, i and m) or in brown-bordered red areas (Fig. 17h and n). A characteristic pattern is a series of simple bands drawn around the interior or exterior of a bowl, a form which turns up again under the streets of Zuñi and is even seen in some of the older vessels in use today. The decorative style of these painted buffware pieces differs from the older style as represented in the redware found here. The bands and areas in brown or brown and red are wider than anything comparable in the wares in vogue in earlier times. In addition a tendency toward pictured forms and isolated units may be noted (Fig. 17e, i and n).

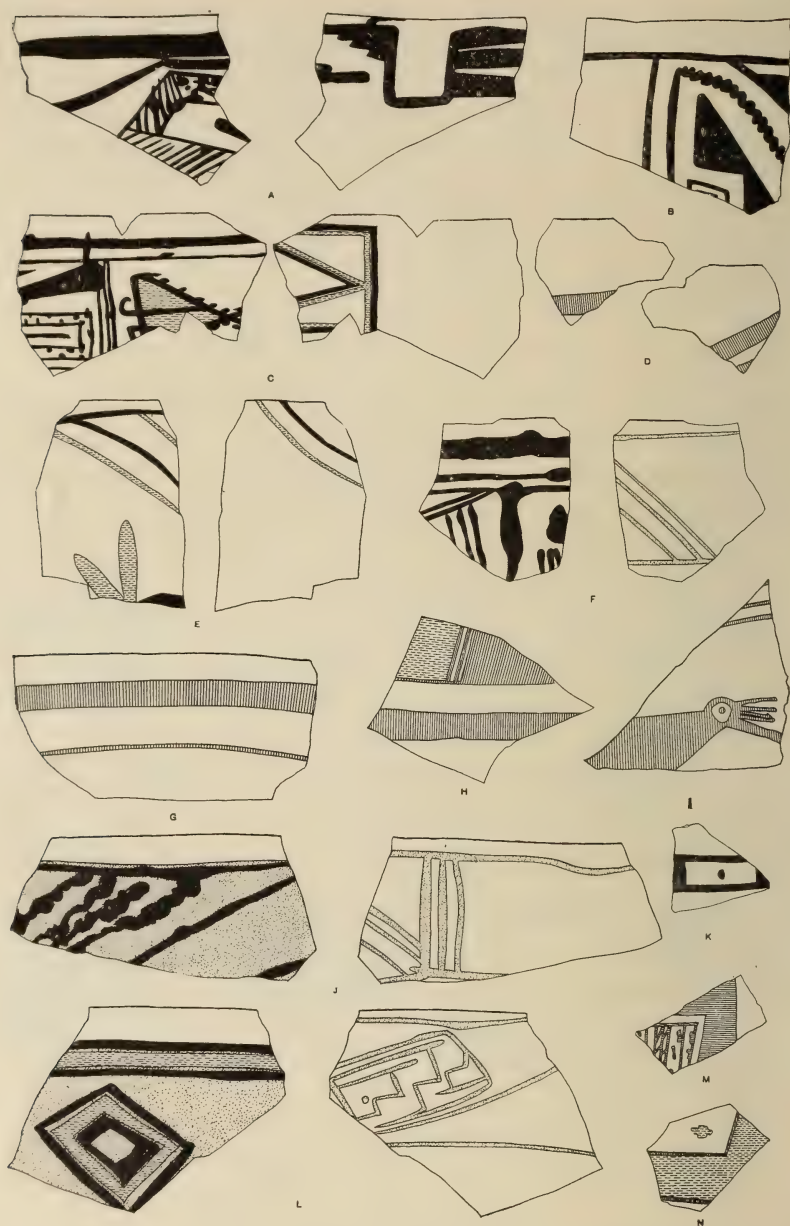


Fig. 17. Pottery of Late and Historic Sites: Site 48. a-g, i, j, and l, bowls; h, k, m and n, jars. a-n, $\times \frac{1}{3}$.



a



b



c



d

Fig. 18. Black-on-White and Corrugated Jars. a, (50.2-232) from a ruin southwest of Zuñi; b, (50.2-234) from a ruin east of *Cuminnkya*; c, (50.2-229) from *Cuminnkya*; d, (50.2-233) from a ruin four or five miles south of Ojo Caliente on the Salina road.

ARCHITECTURAL TYPES.

With the time-relations of the ruins determined, it is possible to inquire into the history of another cultural trait, namely architectural types.

It has often been asserted that the pueblo type of architecture was a natural outgrowth from the small house structure with rectangular cells. The fact is probably correct, but the conclusion has been based on the generalizing method, and, with the exception of Nelson's brief statement,¹ has never been subjected to rigid demonstration.

The only statement worthy of serious consideration referring particularly to the Zuñi region is that of Fewkes.² Assuming that both portions of composite rectangular-circular ruins were occupied at the same time (Site 161 is under discussion), he argues that this is a transitional type intermediate between the older circular pueblo, where pueblo growth was limited by the wall of circumvallation, and the rectangular pueblo in which growth by accretion would make no impression on the form of the pueblo structure.

We have utilized the architectural data referring to the ruins furnishing pottery data for the foregoing sequence to investigate these points. In Table XI the ruins are grouped in three general types and ranked according to their positions in the pottery sequence. Where definite information was available, the shape and dimensions (in feet) are given.

TABLE XI.

SEQUENCE OF ARCHITECTURAL TYPES.

Percent of Ranking Ware	Slab-House Type	Ruins of Small House Type	Pueblo Type
1—	15?		
2	14?		
2	7?		
2	50?		
?	40		

¹ Nelson, 178.² Fewkes, (a), 123.

TABLE XI.—(Continued).

Percent of Ranking Ware	Slab-House Type	Ruins of Small House Type	Pueblo Type
4	3?	51	
24		57 — □, 20 × 20	
30		49	
33		72	
40		70	
42		166 — □, 25 × 10	
48		16?	
50		73	
50		2?	
62		83 — □, 20 × 10	
67		35	
75			
1—		6	
2		23	
2		21 — □, 50 × 30	
2		165	
2		24	
3		17 — □, 85 × 20	
5		18 — □, 70 × 20	
6		58 — □, 60 × 20	
7		60 — L, 40 × 20	
8		19	
8		40	
9		29	
10		167	
10		76	
10		164 — □, 30 × 25, etc.	
12		5	
13		26	
13		1	
14		28	
15		95 — □, 20 × 8	
16		56 — □, 21 × 10	
16		74	
18		36	
18		27	
18		80 — □, 50 × 20	
19		62	
20		37	
20		38	
22			4 — □, 225 × 180

TABLE XI—(Concluded).

Percent of Ranking Ware	Slab-House Type	Ruins of Small House Type	Pueblo Type
22		92 — □, 20 × 10	
24		46?	
25		163 — □, 36 × 36	
30		96	
32			86 — □, (?), 250 × 200?
39		90 — □, 60 × 40	
59		91 — L, 45 × 36	
54		75	
47			71 — □, 273 × 216
46			84 — ○, 215 × 150
46			85 — ○, 150
37		30	
36		82 — 30 × 10	
35			11 — □, 300 × 180
30		81 — 75 × 20	
?		121 — L, 106 × 42	
?			104 — ○, 240 × 204
?			149 — □, 300 × 210
?			161 — □, 350 × 325, and ○, 325
?			97 — □, 350 × 280
?			146 — ○?, 170 × 125
?			139 — □, 260 × 260
14-11			33
7			8 — ○, 210
3			48
6			45
0			13

These data suggest that the earliest type of dwelling was the "slab-house." Our only example of this was a semi-subterranean elliptical structure, eleven feet by eight, with adobe walls in the base of which stone slabs had been set on edge. The structure was probably covered by a brush roof. Of dwellings with rectangular cells, the small house undoubtedly preceded the pueblo type. The usual size of these is very well indicated by the tabulated dimensions. In groundplan they appear as a single straight row of rooms, or as rectangular, L-shaped, bracket-shaped, or E-shaped blocks. There is no certain evidence that the later examples of this type are larger than the others, although this is suggested. This architectural type remained in use after the introduction of the pueblo type.

The pueblo type is inaugurated after the introduction of three-color painted ware, a variety of Type I. There is no evidence to prove that in this region at least the pueblo has grown out of the small house. The evidence points rather to the direct introduction of the pueblo as an architectural type. In this connection the tendency to build large pueblos *en bloc* and to abandon them shortly after must be considered significant.

The prevailing pueblo types are the rectangular block built around a central court and a circular, oval, or rather polygonal, ring likewise enclosing a court. The courts often contained supernumerary buildings and wings, in some cases being substantially filled. Other pueblos are rather amorphous structures, conforming largely to natural features. While our superficial survey prevents any very definite statement, it would seem from the straight lines and regular curves involved that many of the pueblos were planned beforehand and built *en bloc*. It is not clear that the circular pueblo preceded the rectangular, or *vice versa*. Both types were evidently in use synchronously. In the two composite ruins in this region (Nos. 138 and 161) the walls of the circular sections stand higher than the rectangular. It is also true that the best-preserved ruin in the whole area is a circular ruin (No. 162) in Soldado Canyon. But it may be that a circular wall is better able to withstand undermining forces. The evidence does not seem to indicate a change in either direction.

The historic pueblos appear amorphous in groundplan (see Mindeleff's maps). This may be due to the fact that they conform to the knolls on which they lie. The post-Conquest refuge villages, possibly excepting that on Towwayallanna, are compact groups conforming closely to naturally defensible positions.

This brings us to the question of the relation of architectural type to defense. With the exception of the refuge villages, few of the pueblos show a situation clearly for defense. The two structures on Inscription Rock are in an easily defended location, particularly the northern ruin. So is Gigantes ruin (No. 146), and a few small ruins are located on mesa tops. But this is not an impressive list. Ruins are located on low knolls and gentle slopes with a good outlook. As stated in the description of the region the prevailing winds seem to have had as much to do with the location of at least the smaller ruins as any other factor: they generally lie against a sheltering hillside. Whether the enclosed pueblo was a sufficient protection, or whether protection was not needed cannot be answered from our data.

The historical position of another cultural trait, the use of obsidian, can also be roughly given. Our experience conforms with Kroeber's that obsidian is found only at relatively late ruins.

GENERAL SUMMARY.

It seems worth while briefly summarizing the preceding pages in order to emphasize the distinction between the body of data of which we are reasonably sure and the outline chronology which is in part an hypothetical structure. It does not seem fair to leave an impression of greater certainty in the results than the data seem to us to warrant. At the risk of repetition then, we will briefly indicate what we believe these data show.

Let us first turn to the methodological limits imposed by the type of remains. We have seen that the natural advantages of the region under discussion are somewhat limited. Water and arable lands are by no means uniformly distributed over its extent; rather, the combination of a copious water supply with adjacent fields is found at only a few spots. As a result the structures now in ruins seem to have had a transient occupation. With the exception of certain historic and related sites the refuse heaps at these ruins were uniformly shallow. Four of the ruins, Hawwikku, Kettcippawa, Kyakkima, and Mattsakya, were identified years ago as among the "Seven Cities of Cibola." At one, Mattsakya, a deep refuse heap was found in which the potsherds could be traced back in gradual transitions to and through another deep heap at a neighboring ruin, Pinnawa. But here was the end of direct stratigraphic information, and from this point on we were forced to fall back on the uncertain method of hypothetical seriation.

Nevertheless, the body of data available for such a seriation is, we believe, on a par with that obtained by stratigraphic methods. We have no reason to doubt that samples of potsherds collected from successive levels of the ash heaps present us with valid chronological indices. Why then cavil at the use of similar samples from the surface of the ash heaps? We have demonstrated above (p. 254) that it is possible to collect surface samples approximating in accuracy to those from refuse heaps; in fact, supposedly identical surface samples differ no more among themselves than a corresponding series of refuse heap samples. We have analyzed such potsherd samples from each of the ruins for the proportions of their constituent types. Aside from their value in our hypothetical scheme, these collected data have an absolute value in that they characterize each ruin with some precision.

A suggestion for ranking these data in seriation is contained in the short stratigraphic series: there corrugated ware is seen increasing steadily from complete absence in modern Zuñi to fourteen percent at the base of the

Pinnawa ash heap. But we cannot straightway rank all the data on the basis of corrugated percentages, although the unity of types in all the ruins suggests doing so, because we find that the values fall into two groups. In each group corrugated ware ranges from zero to about fifty percent, but in one it is accompanied only by black-on-white ware, in the other by black, red, and buff wares. The second group is further subdivided by the presence at some of the ruins of glaze-decorated potsherds as well as painted wares. Among these are the historic sites and the affiliated ruins which furnished stratigraphic information. This suggested a sequence in which corrugated ware rises from zero to about fifty percent (with only black-on-white ware present), and then drops back to zero again, while painted ware is being followed by glazed wares (the second general group). This suggested sequence was then ready to be checked by observing simultaneous variations in wares other than corrugated.

Nothing can be said as to the validity of the first half of our sequence, the "black-on-white series," beyond the fact that it seems plausible. But for the remainder of the sequence the checks employed give fairly certain results. First, concomitant variations occur in the wares accompanying corrugated. Second, the variations of individual values from the general trend of the sequence are not beyond the limits of chance. Third, a continuum of style is seen in three-color decoration which appears first at the later ruins of the "painted ware series" and continues on through the "glazed ware series." But while the general sequence is checked in its parts, it develops that a group of values belonging late in the series is missing; that is, we simply failed to cover sufficient territory in our survey to include ruins of this period. According to the available literature, such ruins probably lie further down the Little Colorado. But so long as such an hiatus remains in our data, we cannot be certain that the separated sections of our series are parts of a single historic sequence. True, the hypothetical sequence for the Zuñi country parallels that of the Rio Grande region. But if there has been a common development over a large section of the Southwest, we are still uncertain, for we may well be dealing here with parts of two separate sequences. The case for our chronological outline must rest at this point until the hiatus can be investigated. But until we then know the value of these data for this particular chronological scheme, we can at least be sure that they have an absolute value outside of it.

The suggested pottery sequence closely parallels that of the Rio Grande both in the order in which the several decorative techniques were used and in the style of decoration. It differs principally in the tendency to vary color combinations rather than decorative technique, and to use painted decoration in preference to glaze. Glaze decoration appears to have been

regularly substituted for certain painted decorations, but was always rather limited in use; hence we judge that glaze decoration was a borrowed trait.

So far we have used only pottery data in erecting an outline chronology in order that we might use architectural data as an independent check. When the ruins are ranked according to the pottery scheme, a parallel sequence of architectural types was found: first, probably slab-house structures (p. 228), then small houses, and finally rectangular and circular pueblos. This may be taken as a confirmation of the pottery scheme, since all students have suggested this as the probable course of development. The pueblo type appears more or less synchronously with the introduction of decoration in three colors: it probably did not develop in this region, but seems to be a borrowed trait.

Certain general shifts of the center of population have taken place. We have only a few scattered ruins belonging to the earliest period ("black-on-white series"). During the following period of the "painted ware series," the focus shifted from the lower half of the Zuñi Valley eastward to the continental divide where it remained throughout the period of the "glazed ware series." With this shift the pueblo appeared as the prevailing architectural form. The next ruins for which we have data are the historic ruins and others closely related. Again there has been a shift, for these center back in the lower Zuñi Valley. The available information suggests that had our survey been carried for some distance further down the Little Colorado Valley, of which the Zuñi is a tributary, we would have found ruins immediately antedating the historic ruins and probably intermediate between them and the ruins centering in the continental divide. This may mean that there was a general movement westward and then a return eastward to the historic location.

In short, the data assembled in the preceding pages are a reasonably certain characterization of the ruins visited. The suggested chronology may be valid in outline and even quite correct in part, but it cannot be accepted as more than indicative while an integral part of the territory remains unsurveyed. The publication of the results to date seems wholly justified as marking the completion of one important step in the establishment of Zuñi chronology, but particularly as an exposition of archaeological method.

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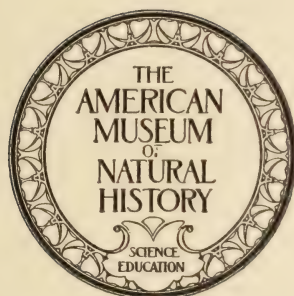
ANTHROPOLOGICAL PAPERS
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NOTES ON SOME LITTLE COLORADO RUINS.

BY

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INTRODUCTION.

In the suggested chronology for ruins in the Zuñi region, outlined in the preceding pages of this volume, it developed that aside from certain undoubtedly early sites, the ruins of this region fall into two groups. One group, including such ruins as Hallonawa and Hecota'utlla, has decorated pottery sufficiently characteristic to define a local type. The other group includes the historic pueblos, Hawwikku, Mattsakya, etc. It was suggested that there had been a continuous development on the soil within each group: a development which was further probably continuous from one group to the other.

To summarize: this development consisted of a decrease in black-on-white painted ware from 76 percent to about 30 percent with a corresponding increase in corrugated ware. Following this, redware makes its appearance, increasing to 43 percent. From zero to 14 percent it consists of black painted decoration; at the latter point black and white painted decoration appears as well. At about 20 to 25 percent glaze decoration appears; the additional decorations on redware introduced being black glaze, black glaze and white paint, black glaze and white paint on a red ground with black glaze on a white ground. Meanwhile corrugated decreases from 50 or 55 percent to 30 percent, and whiteware decreases from 45 or 50 percent to about 20 percent, then rises somewhat to 27 percent. With the rise in whiteware, black glaze appears as a decorative technique as well as black paint.

In the second group, which includes the historic pueblos, corrugated decreases from 14 percent to 0 or 6 percent on the surface of historic ruins and blackware makes its appearance at 33 percent, increasing to about 50 percent. Redware reappears as the dominant type of painted ware, with identical decorative techniques, at 37 percent, but decreases rapidly to 4 percent, after which it remains stationary. Whiteware, including decorations in black paint, black glaze, and in addition, black paint or glaze with red paint, reappears at 14 percent and increases to 23 percent. Buffware increases at the same time from 2 percent to 22 percent; decorations only in brown paint at first, then in brown and red paint, black glaze, and black glaze with red paint.

As these data stand, a hiatus is left between the two groups which cannot be filled by any data from the vicinity of Zuñi.

Suggestive indications referable to the hiatus were discovered in discussing the distribution of the pueblos (p. 300 *et seq.*) During the period

corresponding to the first group of data there was evidently a shift of population from the lower half of the Zuñi Valley eastward to the continental divide. But the second group, that of historic sites, centers again down the valley where we find the Zuñi today. The available information suggested that had our survey been carried further westward down the Little Colorado Valley, we would have found ruins immediately antedating the historic ruins.

This lack of data would not permit an answer to the question whether there was a genetic relationship between these two groups of ruins. The data which follow give a negative answer: there is no close historical connection between the two groups.¹

LESLIE SPIER.

March, 1918.

¹ This material was collected on a brief survey of the Little Colorado Valley, in November, 1917. Since my time was limited, an attempt was made to reach only certain ruins which published descriptions, etc., indicated might contain data bearing on this problem; other ruins were seen incidentally. The area visited includes ruins south to the Mogollon Rim and from Zuñi west to Winslow.

LITTLE COLORADO POTTERY.

The distinctive pottery wares from Mattsakya, an historic pueblo, and Pinnawa, occupied immediately preceding, are black, buff, and black and red-on-white wares (pp. 317-320). The second and third wares are most distinctive, particularly the third.

Buffware is distributed in the following ruins: in the Zuñi Valley, at the historic ruins, Mattsakya and Kyakkima, Hawwikku and Kettcippawa (Sites, 48, 45, 25, and 13) and at Pinnawa (Site 33); on the headwaters of the Little Colorado near Springerville (Site 180) and at two ruins at St. Johns (Site 175 and 176); in the Petrified Forest at "Stone Axe" ruin and Wallace Tank (Site 203); along Silver Creek at Forestdale (?),¹ Pinedale (Site 221), Stott Ranch ruin (?),² Shumway (Site 216),³ at the junction of Showlow and Silver creeks (Site 214), and at "Four Mile" ruin near Taylor (Site 213); on the upper Little Colorado near the railroad at the Cheylon ruin and at the Homolobi ruins, Nos. 1, 2, and 3 (?),⁴ near Winslow; on the Mogollon Rim at Chaves Pass and, to judge by the Mearns collection in the American Museum, at some ruins in the valley of the upper Verde River and its tributaries as far south as East Fork.⁵ I am informed that buffware does not occur around Flagstaff. North of the Little Colorado, it occurs in several ruins in the Leroux Wash near Biddahoochee,⁶ in several in the Jettyto Valley near Awatobi,⁷ at Sityatki and about the Hopi mesas,⁸ and to the north at Red Lake.⁹ Elsewhere it has a sporadic occurrence appearing at a pueblo ruin in the Puerco Valley about five miles below Rio Puerco station (Sherds 29.0-6588), at Gigantes ruin (Site 146) near Inscription Rock, in the Galisteo Basin at Pueblo Colorado (29.0-2628) and Pueblo

¹ Hough, Walter, "Archaeological Field Work in Northeastern Arizona. The Museum-Gates Expedition of 1901" (*Annual Report for 1901, Smithsonian Institution*, pp. 279-358, Washington, 1903), 294.

² Fewkes, J. Walter, "Two Summers' Work in Pueblo Ruins" (*Twenty-second Annual Report, Bureau of American Ethnology*, part 1, pp. 1-195, Washington, 1904), 167.

³ Hough, *ibid.*, 302.

⁴ Fewkes, *ibid.*, 29, 30.

⁵ Mearns, Edgar A., "Ancient Dwellings of the Rio Verde Valley" (*Popular Science Monthly*, vol. 37, pp. 745-763, 1890).

⁶ Hough, *ibid.*, 326.

⁷ *Ibid.*, 322; Fewkes, *ibid.*, 621.

⁸ Fewkes, *ibid.*, 650.

⁹ Fewkes, J. W., "Preliminary Report on a Visit to the Navajo National Monument, Arizona" (*Bulletin 50, Bureau of American Ethnology*, Washington, 1911) 27.

San Cristobal (29.0-2425), and perhaps at other points in the upper Rio Grande, and possibly on the San Francisco River near Luna.¹

The buffware area may be bounded by a line drawn from Zuñi south to Springerville, west along the Mogollon Rim to the east fork of the Rio Verde, northwest to Jerome, northeast skirting Flagstaff and the Black Falls to Red Lake, southeast to Adamana, and thence east to Zuñi. (Fig. 1).²

Black and red-on-white ware is more difficult to trace in published

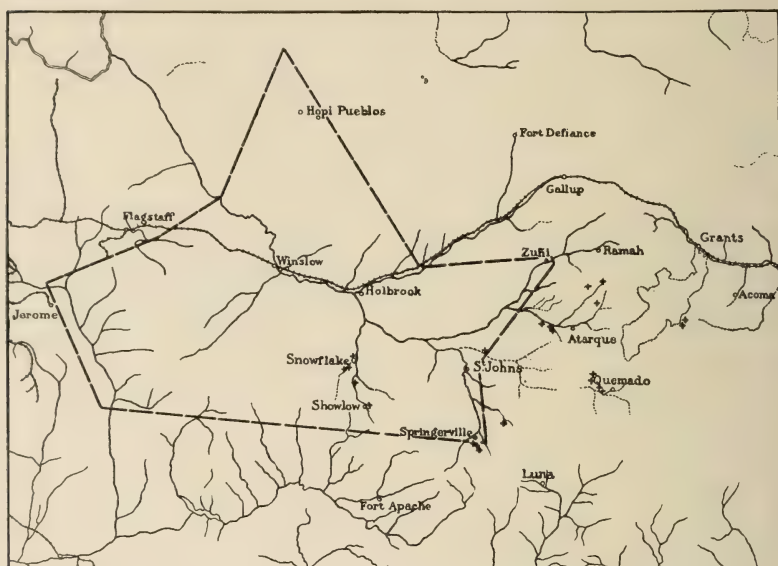


Fig. 1. Map of Buffware Area in the Little Colorado Valley.

descriptions. It lacks the distinctness of buffware, occurs nowhere in large quantity, and therefore has undoubtedly often escaped description. It occurs in the Zuñi Valley at Mattsakya, Kyakkima, Hawwikku, and Ketteippawa (?) (Sites 48, 45, 25 and 13), Pinnawa (Site 33) and at two ruins at Ojos Bonitos (Sites 168 and 170); on the Little Colorado at St. Johns (Sites 175 and 176) and Springerville (Site 180); in the Petrified Forest at Wallace Tank (Site 203) and the "Stone Axe" ruin (?)³; on Silver

¹ Hough, *ibid.*, 59 and 63: "Cream-color" ware is mentioned, but if this was like the buffware under discussion, Dr. Hough would probably have said so.

² The relation of buffware to the red-and-yellow Kayenta type is not clear; see Kidder, A. V., "Prehistoric Cultures of the San Juan Drainage" (*Proceedings, Nineteenth International Congress of Americanists*, pp. 108-113, Washington, 1917.)

³ Hough, *ibid.*, 323.

Creek at "Four Mile" ruin and at the junction with Showlow Creek (Sites 213 and 214); on the Little Colorado at Homolobi No. 1; and it also occurs in the Mearns sherd collection from the upper Verde Valley. It probably occurs elsewhere sporadically, as for example, at a pueblo ruin one mile north of Cubero, New Mexico, where glazed ware sherds are mixed with those of the Chaco type (29.0-5800).

That is, so far as the available data show, this ware seems to have a distribution similar to that of buffware except that it does not occur north of the Little Colorado. This ware has a suggestive resemblance to the polychrome ware in black and red on a white ground of the Gila Valley and Casas Grandes. While it seldom bears a decoration in broad areas like most of the Gila ware, nevertheless, the fine line decorations are quite similar. In the present stage of our knowledge, it is not possible to interpret this resemblance as proof of historic contact, for it is equally reasonable to suppose that the type has been independently developed. For example, the red vessels with large white areas bearing designs in black may have suggested the same color combination in the form of black and red lines on white.

Blackware is even more difficult to trace because it has no distinctive characteristics. It is found in modern Zuñi and the historic sites nearby, in Pinnawa (Site 33), at Ojos Bonitos (Site 168), St. Johns and Springerville (Sites 175, 176, and 181), Wallace Tank (Site 203), on Silver Creek at Pine-dale and Showlow (Sites 221 and 217), at the junction with Showlow Creek (Site 214) and at "Four Mile" ruin (Site 213). In addition it appears in a few ruins east of Ramah (Sites 140, 146, 152, and 161). Except in the case of the ware at the historic Zuñi pueblos this type lacks definition. At the other ruins it is probable that we are not dealing with a new type but rather with a variant of corrugated ware. It is extremely difficult to distinguish the corrugated ware of the late sites, usually carelessly made, with coils partly obliterated and roughly indented or incised, from the smooth blackware. Nevertheless, it is suggestive that this ware does not appear at the western ruins, Cheylon, Homolobi, and Chavez Pass, nor among the Verde sherds. I would suggest that blackware is a relatively recent type, an outgrowth of corrugated ware which it finally displaced entirely. The process was somewhat similar to that at Pecos Pueblo, but may be a more recent and more rapid development.¹

So far as the data go, they show that the historic Zuñi sites are to be classed with those of the western half of the Pueblo area. It is evident

¹ Kidder, M. A. and A. V. "Notes on the Pottery of Pecos" (*American Anthropologist*, n. s., vol. 19, July-September, 1917), 338.

that the Zuñi have had a cultural growth in common with other peoples in this western area. During this period buffware and black and red-on-white ware were developed. Given the fact that there is no great historical relief to these Zuñi ruins — we found Pinnawa to be the only related older site in the vicinity — the only inference possible is that there was actually a movement of Zuñi from some point in the western area into their present location.

It is not possible to do more than suggest which of the ruins in the buff area are most like the Zuñi ruins. The pueblo ruins at St. Johns and Springerville (Sites 175, 176, and 180) are most like Pinnawa in pottery type, the Ojos Bonitos ruins (Sites 168 and 170), although nearer to Zuñi, are less similar since no buffware appears there. This would bring the Zuñi center about fifty miles down the Little Colorado, but beyond this we cannot go. The pottery in ruins further west in the buff area bears a more general resemblance, but it also bears a similar resemblance to Hopi wares. In the present state of our knowledge, it is not possible to assign any particular ruin to the Hopi or Zuñi; we merely know that they had a common culture growth on the Little Colorado. It is true that some ruins suggest closer relations with one modern group or the other, but the evidence does not warrant any specific statements.

The available data on the proportions of the several wares in these ruins are presented in Table I, but are more readily compared with the pottery of Mattsakya and Pinnawa when classified by ground colors (Table II).

There is no very great disparity between these values yet there is not sufficient evidence for ranking the sites.

Smaller and older ruins in the area visited are equally scarce. On the whole, the pottery in these ruins presents no novelties but must be connected with the older group of sites in the Zuñi Valley.

Tables III and IV give the specific characteristics.

Some of the ruins have pottery showing the influence of Tularosa wares, either the inhabitants were of Tularosa culture, made vessels after Tularosa patterns, or the sherds found are from trade pieces. These sherds are principally from corrugated vessels showing variously thin coils of low relief with close regular indentations, polished black interior, fllet edge, etc. The percentages of these wares are shown in Table IV.

In addition, sherd collections made by Mr. Nelson and myself in the

Fig. 2. Brown-on-Buff: upper left, Chavez Pass (29.0-6560); upper right, Site 203 — Wallace Tank (29.0-6453). Black and Red-on-White: Site 203 — Wallace Tank (lower left, 29.0-6438; lower right, 29.0-6436). Bowl 29.0-6438 is decorated with black (or green) glaze on the inside and with black bordered red figures outside. Bowl 29.0-6436 has on the inside triangular red areas filling the angles of the black figures, with angular hooks in red running from the apexes, outside are black bordered red figures.

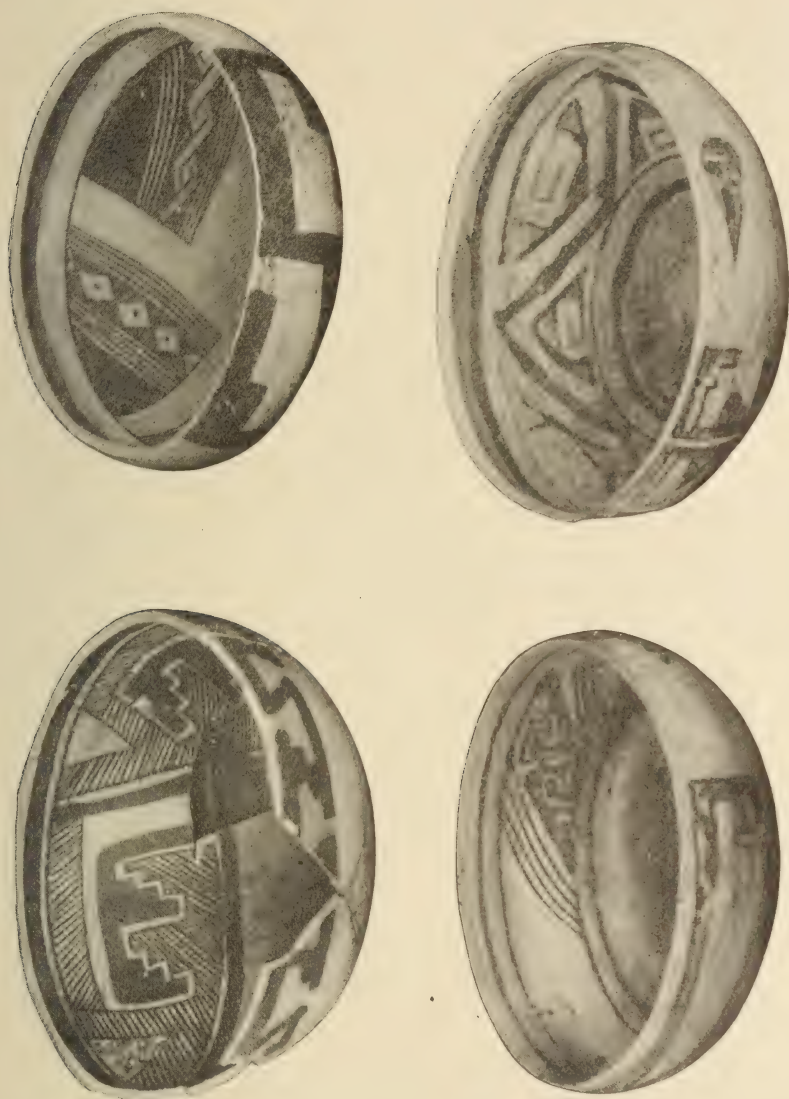


Fig. 2. Bowls of Brown-on-Buff and Black and Red-on-White Types. (See footnote on opposite page).

region between Acoma and Holbrook from the railroad to the Mogollon Rim show the same influence at the following sites: Showlow (Site 217), three ruins south of Springerville (Sites 183-189 ?) and one east (Site 190), Ojo Hallado, Ojo Pueblo (Sites 157 and 153), and to the south at the Delfin Chavez ranch, at two ruins nine miles west of Jaralosa and another fourteen miles west, at several small ruins four miles west of Rito Quemado and at two six miles northwest, and finally several among a group of about twenty-five small ruins in the Cebolla basin west of Acoma. The distribution of the sites is shown by crosses on the accompanying map (Fig. 1).

We now have an answer to our primary problem, the chronology of ruins in the Zuñi region. So far as our data go it appears that there are two fairly distinct groups of ruins in the region. The older group, of which Hallonawa and Hecota'utlla are best known, center around Pescado and Ramah. The recent group of ruins and pueblos belonging to the Zuñi center further west. There seems to be no close historic connection between the two groups, since the Zuñi ruins have cultural connections with an older group on the Little Colorado considerably to the west and these western ruins are not intermediate between the Zuñi ruins and the Hecota'utlla group.

The reader will naturally ask what bearing this result has on the outline chronology presented in the earlier pages of this volume. Did not that chronology assume that all ruins in the region belonged to one culture sequence and then proceed to rank them serially according to an arbitrarily selected standard? It will be recalled, however, that while the Mattsakya-Pinnawa refuse heap sections supplied a suggestion for ranking the ruins in the Hecota'utlla group, which I now believe are not historically related to Mattsakya and Pinnawa, nevertheless both the sequence of the Zuñi group and that of the Hecota'utlla group stand independently proved. The sequence of the Zuñi group was demonstrated by stratigraphic evidence from the Mattsakya and Pinnawa refuse heaps. The sequence of the Hecota'-utlla group depended for proof on the variations in other pottery wares which we found accompanying that of corrugated ware. That is, the untenable assumption that Zuñi and Hecota'utlla ruins were part of one culture sequence was not a necessary part of the proof of either of the two sequences. Of course, the final result renders the suggestions regarding the "missing" data belonging in the supposed hiatus unnecessary (pp. 299 and 305.)

The answer to our general problem has a wider interest. The Zuñi region is located almost exactly in the geographical center of the Pueblo area, but our results show on the contrary that this was not the cultural center. In this region are two disparate groups; the earlier group undoubtedly had cultural affiliations outside of the region; the Zuñi group participated in a cultural growth on the Little Colorado in which the Hopi also shared.

TABLE I.
PERCENTAGES OF POTTERY WARES IN RUINS OF THE BUFFWARE AREA.

Site	Corru- gated	Black	Two Color Painted Ware			Three Color Painted Ware			Two Color Glazed Ware			Three Color Glazed and Painted Ware			Size of Sample
			White	Red	Buff	White	Red	Buff	White	Red	Buff	White	Red	Buff	
175 — St. Johns	26	9	11	21	2		8		3	8			12		254
168 — Ojos Bonitos	25	8	13	4			6		4	12			28		191
213 — Four Mile	16	19	11	18	6		11		1	4			14		398
214 — Showlow and Silver Creeks	26	27	12	10	2		13		5	2			3		178
203 — Wallace Tank	23	15	8	12	8		18	1	1	3			11		421
221 — Pinedale	29	19	15	14	1		5		3	6	1	1	6		315
217 — Showlow	31	7	22	10			16		2				12		137

TABLE II.

POTTERY IN RUINS OF BUFFWARE AREA BY GROUND COLORS.

Site		Corru- gated	Black	White	Red	Buff	Size of Sample
48 — Mattsakya	Upper	3	49	23	4	22	— ¹
	Lower	9	50	22	4	16	—
33 — Pinnawa	Upper	11	50	16	19	6	—
	Lower	14	33	14	37	2	—
175 — St. Johns		26	9	14	49	2	254
168 — Ojos Bonitos		25	8	17	50		191
213 — Four Mile		16	19	12	47	6	398
214 — Showlow and Silver Creeks		26	27	17	28	2	178
203 — Wallace Tank		23	15	10	44	8	421
221 — Pinedale		29	19	19	31	2	315
217 — Showlow		31	7	24	38		137

¹ Averages, see p. 279.

TABLE III.

PERCENTAGES OF POTTERY WARES IN SMALL RUINS.

Site	Corru- gated	Black	Two Color Painted Ware			Three Color Painted Ware			Two Color Glazed Ware			Three Color Glazed and Painted Ware			Size of Sample
			White	Red	Buff	White	Red	Buff	White	Red	Buff	White	Red	Buff	
169	35	4	55	10											69
171	41		35	14			4		4	2					92
181	47		20	15			8		1	3		1	1		215
192	46		46	2					6						140
195	49		42	9											71
196	53		13	23			8		1	2					182
197	40		44	16											136
198	2		96	2											436
202	54		23	19					2	2					87
218	17		73	10											58

TABLE IV.

PERCENTAGES OF POTTERY WARES IN RUINS WITH TULAROSA TYPES.

Site	Corru- gated Tularosa type	Black	Two Color Painted Ware			Three Color Painted Ware			Two Color Glazed Ware			Three Color Glazed and Painted Ware			Size of Sample
			White	Red	Buff	White	Red	Buff	White	Red	Buff	White	Red	Buff	
173	51 [.8]		40	9											79
209	54 [10]		25	19					2						133
211	61 [34]		30						9						87
212	51 [15]		21	28											110
215	52 [15]		29	10			2		7						218

NOTES ON THE RUINS.

The following notes roughly indicate the character and distribution of some of the ruins in the Little Colorado drainage. For the sake of completeness, ruins visited by Fewkes, Hough, and Nelson, but not by myself, are enumerated: Drs. Fewkes and Hough have published descriptions, Mr. Nelson has placed his field notes at my disposal. The list represents a fair survey of the area: it is possible that a few ruins have been overlooked. The small number of pueblos in this area is striking in comparison with the Zuñi Valley.

Sites are listed in order from east to west down the Little Colorado Valley.¹

OJOS BONITOS TO ST. JOHNS.

Site 168. The Atarque wash runs northwest from Atarque to the Zuñi River at a point about eight miles below where the latter crosses the New Mexico state line. Ojos Bonitos is situated on the wash a mile or two east of the state line and about eight miles southwest of Ojo Caliente.² The pueblo ruin³ at this point is rambling; the main portion about 325 by 125 feet, with several more or less isolated extensions (Fig. 3a). Where cut into for the Mexican ranch houses, now occupying the site, ordinary walls of medium-sized sandstone blocks, roughly squared, laid in mud are to be seen. Basalt manos, obsidian chips, and fragments of selenite were seen. There are no ash heaps here, so a random collection of sherds was taken from the surface of the ruin.

Site 169. A mile and a half southeast of Ojos Bonitos the road to Jaralosa passes three or four small ruins and potsherd sites.⁴ One of the latter contains pottery of the Chaco Canyon type (29.0-5761). The

¹ To avoid confusion, these sites are listed serially after those described in Part III of this volume. Locations are sometimes given in latitude and longitude scaled from the U. S. Geological Survey maps.

² Ojos Bonitos, or Ojo Bonito, is incorrectly placed on the map of the Zuñi Valley and plateau (Fig. 2, Part III, this volume). The Atarque wash flows across the state line where the more northerly wash is shown. This northern wash may join the Atarque wash near Ojos Bonitos or may not have any outlet.

³ Bandelier, A. F., "Final Report of Investigations among the Indians of the Southwestern United States, Carried on Mainly in the Years from 1880 to 1885" (*Papers, Archaeological Institute of America, American Series*, vol. 4, part 2, Cambridge, 1892), 339.

⁴ These ruins may be referred to by Bandelier, *ibid.*, 339, as a "small-house village." He counted eight structures.

southernmost ruin measures 30 by 60 feet: the others are similar. A surface sample of sherds was taken from this southernmost ruin.

Site 170. A rectangular pueblo five or seven miles southeast of Ojos Bonitos on the road to Jaralosa, seen by Mr. Nelson, could not be located. According to his notes, it lies one half mile south of the road. It is nearly square, 135 by 125 feet, quite low and appears old. It is built of fairly regular blocks of sandstone, but set in considerable mud. The outer wall was evidently strongest. The rooms are for the most part small. (Sherds 29.0-5760).

Site 171. A straggling pueblo ruin lies on the road from Jaralosa to St. Johns, about twenty miles from the latter (N. 34° - $40'$ - $30''$: W. 109° - $6'$ - $45''$). The two largest house blocks are each 150 feet long (Fig. 4a). The sandstone walls are fairly distinct. Refuse heaps, two or three feet high, occur to south and east, but excavation would have necessitated making dry camps. Manos appear and sherds are plentiful.

Site 172. Mr. Nelson found a potsherd site, but no ruins, on the direct Ojos Bonitos-St. Johns road, about ten or twelve miles from the former. At this point, the road comes over a ridge and gives an outlook over the Little Colorado Valley: it must be near Site 171. (Sherds 29.0-5763).

Site 173a. A small ruin is located about ten miles northeast of St. Johns on this road and a mile or two north of Carrizo Creek. It is about 150 feet long, is fairly low and built of lava. (Sherds 29.0-5764).

Site 173b. A small house ruin lies a mile north of the Carrizo Creek crossing on the road to Ojos Bonitos via Pine Springs. A surface collection of sherds was made at random.

Site 174. There is a potsherd site six miles northeast of St. Johns and one and a half miles south of Carrizo Creek on the Ojos Bonitos road. Sherds are black-on-white and corrugated.

ST. JOHNS TO SPRINGERVILLE.

Site 175. Two pueblo ruins are situated at the south end of St. Johns. The first is 300 yards above the bridge across the Little Colorado on the west bank. The ruin stands elevated twenty feet on the end of a ridge. It is rectangular, about 200 by 75 feet, with a short face at the river bank. The rectangular central depression is divided into two unequal parts, evidently courts. An indefinite structure seems to extend westward for 100 feet. The ruin appears to stand five to eight feet high. The masonry, which shows in one or two opened rooms, is of friable sandstone and is fair. Basalt manos, a grooved maul of basalt, obsidian, etc., were seen. Refuse

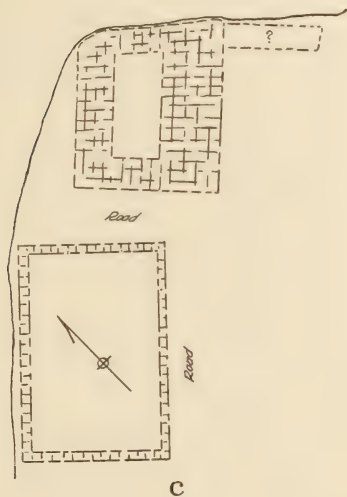
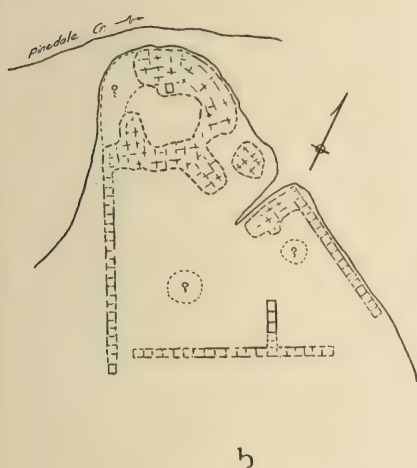
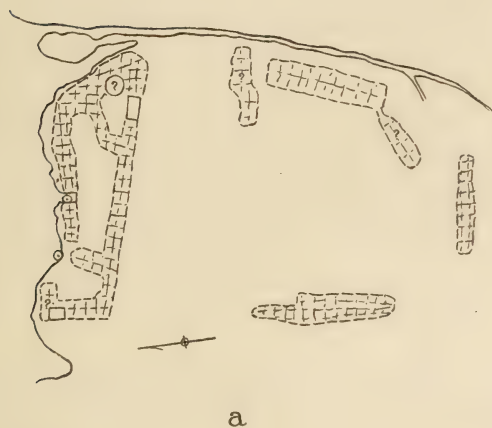


Fig. 3. Plans of Ruins: a, Ruin 168; b, Ruin 213; c, Ruin 221. Scale: 1 in. = 242 ft.

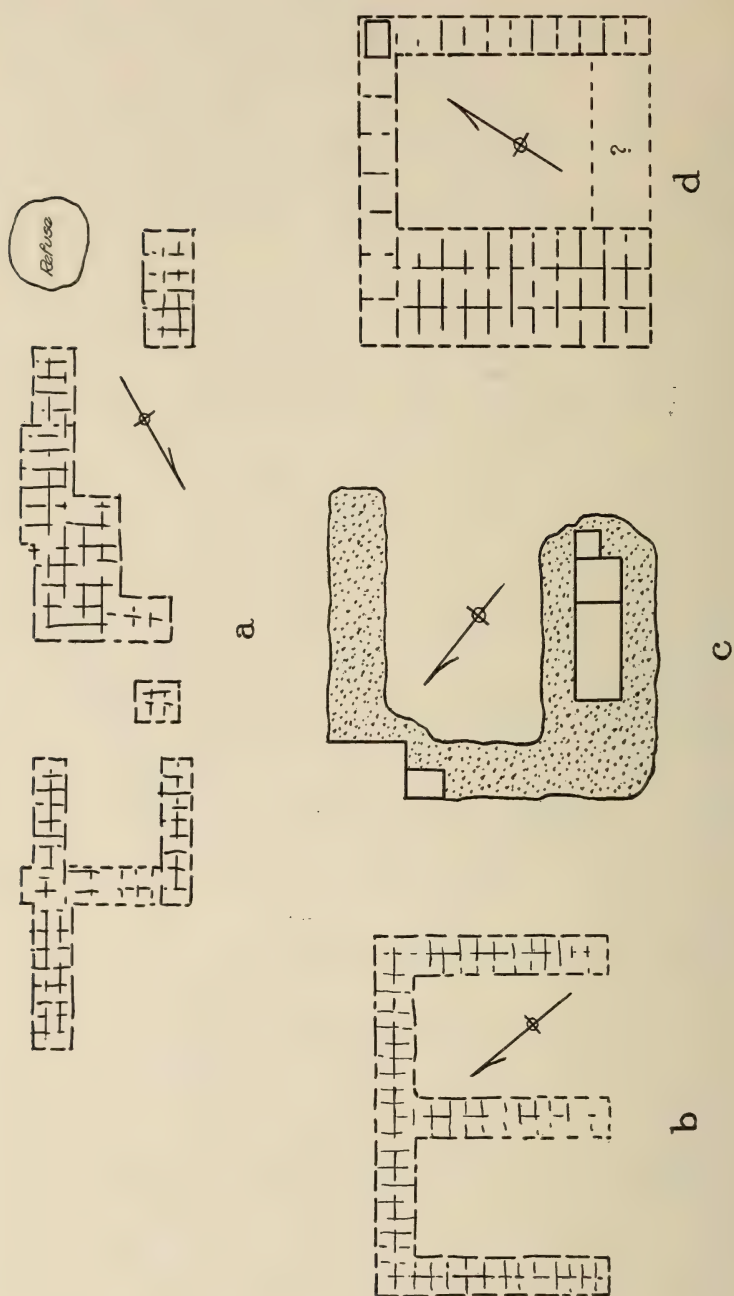


Fig. 4. Plans of Ruins: a, Ruin 171; b, Ruin 196; c, Ruin 209; d, Ruin 212. Scale: 1 in. = 100 ft.

on the sides toward the river has been swept away in recent floods. A random surface collection of sherds was made.

Site 176. The second ruin is 200 yards above this on a similar knoll on the same bank of the river. It is quite undefinable and low, but the mound suggests a rough L with arms about 200 feet long. There may possibly be two circular kivas. Some pottery shows on the surface, but it is scarce.

Site 177. Immediately west of these ruins an extensive burial ground has been repeatedly dug into and much pottery removed. It extends along the gravel hills for half a mile south of St. Johns. To judge by the pottery, the burials date from several periods.¹ Some building stone was found here. On one knoll 400 yards from Site 176 there are circular depressions and pottery of the slab-house type of Site 14. (Sherds 29.0-5768).

There are said to be ruins in the plain a mile or so south of east of St. Johns.

Site 178. Ruins are said to lie at Tule, Tusas, and San Cosme ten miles above St. Johns in the gorge of the Little Colorado. These include pueblo ruins and caves. Bandelier says that the pottery from one of these is like that at the Showlow ruin.²

Site 179. A ruin at Walnut Grove, eighteen miles south of St. Johns, is reported by Mr. Nelson.

Site 180. Four or five miles below Springerville the deep gorge through which the Little Colorado flows suddenly opens out into a round valley. Two sites lie on the east bank of the river just below the gorge. According to Mr. Nelson's notes, the northernmost stands on a small sandstone peak, about one hundred feet above the adjacent river. The ruin is small, compact, and conforming to the peak roughly triangular, 75 by 75 feet. The masonry is very ordinary; sandstone in mud. A small door with a stone lintel is partly exposed, as well as a small loop-hole, eight inches square. (Sherds 29.0-5769).

Site 181. A short distance upstream on the same bank is a small pueblo ruin built on a slight knoll at the edge of the bottom land. It is roughly 125 feet square, with the east corner rounded and a jog in the wall at the opposite corner. A small, low, hollow wing runs out to the southwest. The pueblo is very compact and probably with two stories. A few rooms have been opened: dimensions, 8 and 12 feet. The walls are ordinary; large rough sandstone and lava blocks, with courses of thin slabs. Potsherds are scarce, but a random collection was made. Indications of two structures,

¹ Bandelier, *ibid.*, 386.

² Bandelier, *ibid.*, 386, 392.

one of about three rooms, the other of five or six, were seen one hundred feet east. Large stones set on edge had been used in the foundation.

Sherds were found in caves and a rock-shelter in the gorge of the Little Colorado, two or three miles below Springerville.

Site 182. Mr. Nelson found a pueblo ruin under the lava cliff about a mile north of Springerville. It is situated on the first terrace below the mesa and is partly protected by rocks rising in front. Near the rectangular pueblo, 110 by 100 feet, is a square structure 40 by 45 feet, possibly for ceremonial use. Several corrals appear on the terrace below. The pueblo walls, laid in mud, are fairly good. (Sherds 29.0-5772).

Site 183. Seven sites are located in Water Canyon about two miles south of Springerville near Eager. Mr. Nelson's notes give the following data. Four ruins are strung along the east side of the canyon. The first, a small compact pueblo about 150 feet square with a possible kiva of 25 feet diameter, is built on a slight rise. It is reduced to a hillock with lava boulders lying over the uneven surface. Débris is mixed with the rock but no refuse heap appears.

Site 184. A small house ruin lying a quarter mile south contains six to twelve rooms. It is built like Site 183.

Site 185. Another house ruin, 30 by 100 feet, lies further south ranging northeast-southwest across the road. There is possibly a kiva at the west end and possibly two additional small houses to the south. The ruin was apparently built of lava boulders.

Site 186. The fourth ruin, about one hundred yards south of Site 185, is a small house or houses built partly in the road and partly to the west of it. Few sherds appear here.

Site 187. Some distance south is a ruin measuring about 30 by 50 feet. It is built like the above.

Site 188. A small ruin lies somewhat north of Site 183 by a walnut grove on the opposite side of the creek. It has the same construction as the above.

Site 189. To the west of Site 188 is a medium-sized ruin. It is of boulder construction and difficult to make out; stands four to eight feet high and is rough and uneven on top. It measures roughly 180 by 150 feet with the main axis apparently northeast-southwest. There may be three circular kivas; one about 45 feet across. The pottery from all of these ruins is similar, with the exception of Site 184 where only corrugated and black-on-white appears. (Sherds 29.0-5773).

Site 190. About seven or nine miles east of Springerville the highway reaches Coyote Creek. Here, on the left bank of the creek above a spring, Mr. Nelson found a pueblo about 90 feet square with irregular additions and containing a possible kiva 20 to 25 feet across. It is fairly well built of

sandstone and stands from 2 to 6 feet high. Additional buildings to the south were smaller, one 60 by 50 feet, others had two, four, and six rooms. A burial ground lay to the east of the pueblo, measuring 75 by 150 feet. This had been dug up, showing much ash and a portion of a wall or small house. Basalt manos and sherds were seen. (Sherds 29.0-5775).

Site 191. Five small ruins lie from three to six miles below the spring along Coyote Creek. Three of the ruins are quite small, perhaps one or two room houses; the others are larger with ten to fifteen rooms. (Sherds 29.0-5774).

I was told of ruins twelve miles east of Springerville, a mile and a half south of the highway on an old road; the ruins being on a mesa above a spring.

CAÑADA DEL VENADO TO HOLBROOK.

Site 192. A short distance west of the New Mexico boundary the Zuñi River drops through the gorge called Cañada del Venado. Pictographs cover the fallen rocks for miles along the Cañada. There are, undoubtedly, small house ruins on both sides of the river in the Cañada (Deer Spring looks like a likely spot) as well as those mentioned by Bandelier on the ridges above.¹ I counted eight along the west side of the Zuñi from a mile and three quarters above Cedro (the old Windmill Ranch) to within a mile of that place, where a larger house is located. This is of sandstone, rectangular, 30 feet broad and 125 feet long, with a northern end low for 45 feet and probably only one story high while the remainder stands four to five feet high and was probably two stories. A small refuse heap, two or three feet high, lies to the east. Random collection of sherds was made on the surface.

Site 193. A small house ruin lies one half mile north of Cedro on the west bank of the river.

Site 194. Another small house ruin lies one quarter mile west of the ranch house at Cedro. Other small house ruins probably lie nearby.

Site 195. From Cedro an old road to Hard Scrabble Ranch runs westward onto the mesa. After traveling five miles north and west of Cedro the Hard Scrabble draw is reached. A small house ruin, 10 by 20 feet, lies at the eastern rim of the draw, opposite the ranch house and a half mile from it. A random collection of sherds was made. Three more small ruins lie within one hundred yards east of this one and others may be scattered around the draw.

Site 196. The pueblo ruin at Hard Scrabble (N. 34°-49'-20''; W.

¹ Bandelier, *ibid.*, 339.

109°-15'-30'') lies north of the ranch house and dam. It is E-shaped with the arms extending down a slight slope (Fig. 4b). The main section measures 185 feet; the three arms appear to be of the same length, 120 feet, but their outer ends are indefinite. The whole sandstone structure is low and covered by drifted sand. Sherds are plentiful, but there is no perceptible ash heap.

Site 197. Following the road westward (or about 20° south of west) from Hard Scrabble toward the Long H Ranch for about five miles the remains of a tank and ranch house called Prospect are found (N. 34°-48': W. 109°-20'). A road from the St. Johns district along the Navajo Mesa into the country eastward of Jacob's Well passes nearby. A fair sized pueblo is located on a high sand knoll a mile east of Prospect and south of the Hard Scrabble road. It is built of sandstone, now low and buried in sand, roughly rectangular, 100 feet by 20, with long axis north and south and possibly with some additional isolated rooms to the east. A random collection of sherds was made from the surface here.

Site 198. Due west of Prospect is the Long H Ranch at the twin Salt Lakes. This is said to be eleven miles from Hard Scrabble. The road from St. Johns to Navajo on the railroad runs through this point. Débris covers a large area on the low sand mounds a half mile west of the ranch house. Potsherds, manos and metates were seen, but practically no building stone is present. Structures here may have been built of adobe, but this seems unlikely, in view of the character of the soil in these sand wastes. The point is not clear, but certainly these were not stone buildings. The potsherds, which lie about in enormous quantities, are of the slab-house type except that a small amount of old redware also occurs. A circular stone slab, 16 inches in diameter, 1½ inches thick, was seen.

Seven Springs lies eight or ten miles south of west of the Long H Ranch and about the same distance east of south of No. 5 Ranch. A pueblo ruin is said to lie on top of a mesa a quarter mile southeast of Seven Springs. It is described as a long row of rooms in a mound, very indefinite, but perhaps 200 yards long by 25 wide.

Ten miles southwest of Seven Springs Concho Creek empties into the Little Colorado at Hunt.¹ Bandelier mentions caves and pueblos on the Creek,² but evidently did not visit them, and Mr. Nelson was told of a ruin at Concho, but I was assured by several natives that there were no ruins there, although the place looks likely enough.

Eighteen miles west of south of Concho are Vernon and Mineral. Years

¹ North of Hunt are the two mesas called "Zuñi Mountains," between which the Zuñi River flows. The sacred lake, *KoLuwala*, lies at the southern foot of the southern mesa and on the mesa above is the entrance to the ceremonial cave.

² Bandelier, *ibid.*, 386.

ago the Harris brothers took pottery, etc., from a cave, now called after them, a mile or so above Mineral on Mineral Creek.

Sites 199-200. About ten miles west of the Long H Ranch across the Navajo Ridge the road comes out on Milky Hollow at No. 5 Ranch. There is said to be a pueblo ruin here somewhere in the vicinity of the ranch house. Continuing south of west through upper Milky Hollow¹ toward Potter's Ranch nine miles away (Township 16, Range 25, Section 12) two small ruins are passed. The easternmost is about three and a half miles from No. 5 Ranch near a tank and abandoned houses. Potsherds, etc., are scattered about the wash and sand hills here. The second, one and a half miles west, is little more than a potsherd site.

Site 201. Dr. Hough found a village of small and rudely built houses on the western side of Milky Hollow near its head.² This was about nine miles east of the Petrified Forest and should be near the road from Potter's Ranch to Navajo. The scarcity of building stone suggests that this may be a slab-house site.

Small ruins are said to be scattered all around the edge of the upper Milky Hollow, potsherds occur everywhere and I was assured that every little sand knoll all through this country in the Milky Hollow and eastward bore potsherds, alternately uncovered and reburied in the shifting sand.

Site 202. Leaving Potter's Ranch, a road runs six miles southwest along Milky Wash to the old Greer Ranch, whence a road leads off out of the hollow to the north toward Adamana. About three miles north from the Greer Ranch is a small house ruin by the road. Sherds were gathered at random here.

Another small house ruin is said to lie a mile and a half to the southwest.

Site 203. Four or five miles further north on the Adamana road is a large ruin at Wallace Tank (N. 34° - $52'$: W. 109° - $45'$ - $30''$). It is about three miles southeast of the Natural Bridge in the Petrified Forest which stands a short distance to the west of the Adamana road. The ruin consists of low mounds scattered over the sand hills by the tank for 650 feet northwest by southeast. It is very indefinite in outline, the sandstone walls being buried by drift sand. The ruin has been partly dug into, while the cemetery to the east has been plundered. The Museum was fortunate in securing a large collection of pottery from the graves. Potsherds cover the ground, so a random collection was made. A stone disk, twelve inches in diameter,

¹ The Milky Hollow is incorrectly marked on the U. S. Geological Survey Sheet, St. Johns Quadrangle. The Milky Wash runs from No. 5 Ranch westward by Potter's Ranch and southwest to the Little Colorado about ten miles above Mexican Crossing. On the topographic sheet the word "Hollow" lies in upper Milky Hollow, the word "Milky" in Seven Springs Hollow.

² Hough, *ibid.*, 319.

similar to that of Site 198, was seen here. The tank here probably occupies the position of an aboriginal reservoir. This ruin may be Hough's "Stone Axe Ruin": its position agrees with his description of the position of "Stone Axe" but does not agree with his map. If not the same ruin, "Stone Axe" must be nearby, yet had there been another large ruin near the Wallace Tank site I would certainly have been told of it.

Dr. Hough notes other small ruin to the west and southwest of "Stone Axe".²

Site 204. Dr. Hough describes an unusual ruin, the "Metate Ruin",³ across the wash from the natural bridge in the Petrified Forest and three small ruins on the bluff above.

Site 205. A few miles west are the four Canyon Butte ruins described by Dr. Hough. They lie "close to the northern escarpment of the chief basin of the Petrified Forest, at the source of a wash flowing southwest and entering the Little Colorado at Woodruff. The country is high and rolling, sloping west and south from the rim of the Puerco Valley, which stands about two miles north of the ruins."⁴ Other ruins in the vicinity are marked on his map.

Site 206. A ruin 150 feet square located near Adamana is described by Dr. Hough.⁵

SILVER CREEK: HOLBROOK TO PINEDALE.

A survey of ruins along Silver Creek and its tributaries was made some years ago by Mr. Joseph Peterson of Holbrook. His unpublished map is reproduced here (Fig. 5) by courtesy of the University of California to show a number of ruins not visited by other investigators.

Site 207. There are remains of terraces and house structures on the south side of Woodruff Butte about ten miles above Holbrook. Other house remains are on the summit.⁶

There is said to be a cliff house seven miles above Holbrook on the south bank of Silver Creek.

Site 208. My companion, Mr. Tom Greer, found only one of the four ruins shown by Peterson in Five Mile Draw (five miles below Snowflake). It is a small house ruin, with little masonry showing, about midway between

¹ Hough, *ibid.*, 320-325.

² *Ibid.*, 321-325.

³ *Ibid.*, 318.

⁴ *Ibid.*, 309.

⁵ *Ibid.*, 317.

⁶ Fewkes, *ibid.*, 135, Hough, *ibid.*, 318.

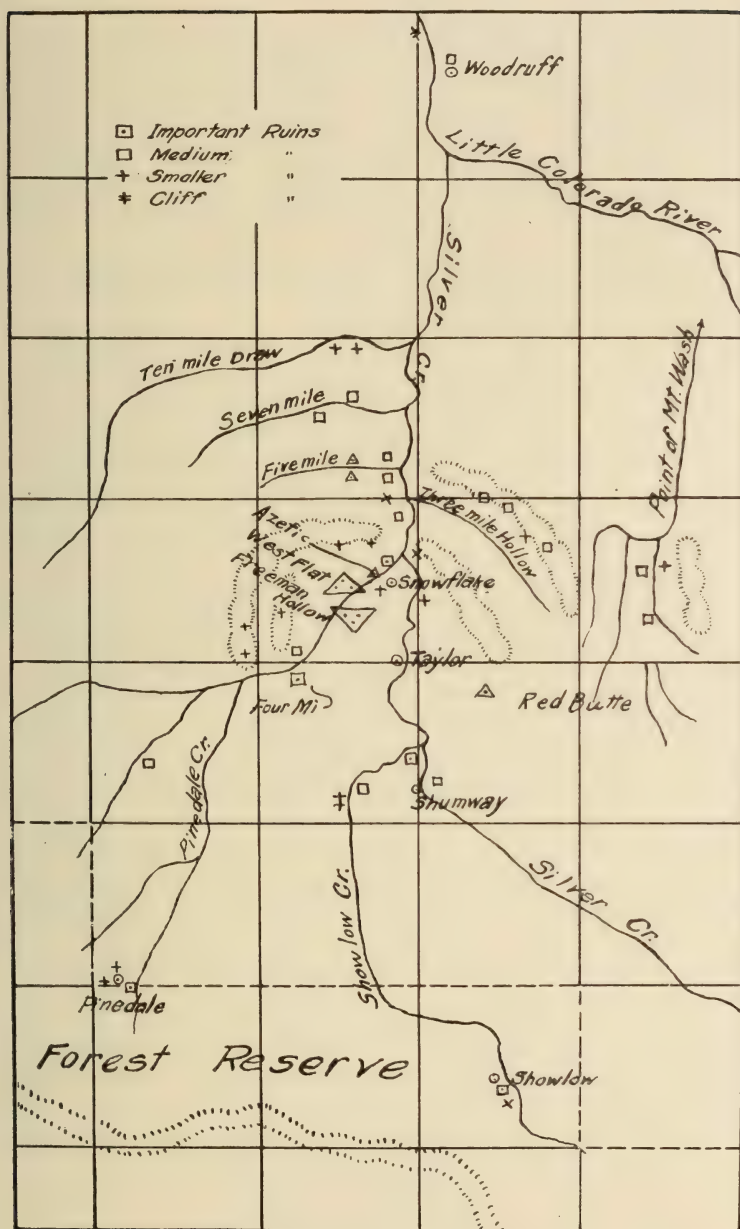


Fig. 5. Sketch Map of Ruins on Silver Creek.

Silver Creek and the Holbrook-Snowflake road. We searched for the other three ruins which must be small.

Site 209. Flake's Ruin is situated a mile and a quarter northwest of Snowflake on the edge of the lowland a quarter mile southwest of where Silver Creek boxes up. The ruin lies on a low knoll, is U-shaped, roughly 80 feet by 70 (Fig. 4c). The southern section is fairly high but not more than one story. The sandstone walls of the rooms excavated by Mr. Peterson still stand four feet high. The cemetery to the east seems to have been dug into.

Site 210. A small ruin in the town of Snowflake was seen by Mr. Nelson.

Site 211. A road due west from Taylor crosses Pinedale Creek or Cottonwood Wash two miles away. A potsherd site lies on the bluff at this point. Half a mile downstream on the east side is a small house ruin about 70 by 20 feet on a little knoll below the bluffs. Sherds were collected here.

Site 212. A short distance north of the Taylor road on the west bank is a medium sized rectangular pueblo. The sandstone masonry is fairly clear, the building about 75 by 85 feet (Fig. 4d). Sherds were collected at random from the surface.

Site 213. Four Mile Ruin¹ (four miles from Snowflake) is situated half a mile south of the Taylor road crossing on the east bank of the creek. The ruin covers an area roughly 400 feet across (Fig. 3b).

Site 214. On the bluff in the junction of Showlow and Silver creeks, a mile and a half north of Shumway, is a pueblo ruin extending over an area 200 feet from east to west by 250 feet. It is very irregular and has been badly cut up by irrigation ditches, but seems to consist of two parts. The northern rectangular part is made up of an L 200 feet on the side, with a building in the hollow side filling out the rectangle. The southern part is an L, 125 feet long, with the end of the long arm near one corner of the northern part. The sandstone walls, in opened rooms, show courses of chinking. One room is nine feet square. Potsherds are not plentiful but a collection was made.

Site 215. A small ruin lies on a little ledge one hundred yards east of Silver Creek, a half mile northeast of Shumway. It is a small place, perhaps 50 by 60 feet, of tumbled sandstone masonry. Manos of lava and sandstone lie about.

Site 216. Dr. Hough found a small pueblo somewhere near the last.²

Site 217. A pueblo ruin in Showlow on the west bank of Showlow Creek

¹ Fewkes, *ibid.*, 136-164

² Hough, *ibid.*, 302.

has been described by Bandelier and Hough.¹ Several excavated rooms exhibited fair masonry of good-sized sandstone blocks laid with regular courses of chinking. Manos, metates, axes, a rectangular stone hatchway with an opening two feet square, four painted slabs from shrines bearing animal figures like those in bowls from this ruin, turquoise, and obsidian chips were seen. Sherds are scarce, but a sample was collected.

Bandelier mentions small house ruins a short distance to the south.

Site 218. The road from Showlow to Pinedale crosses the Linden Valley. About six miles from Showlow and a mile and a half before reaching the Linden Valley there is a potsherd site alongside the road. No building stone shows but it is undoubtedly buried under the cedars. A random sample of sherds was taken.

Site 219. A ruin, called Pottery Hill, is situated near Linden. Small house ruins are located nearby.²

Site 220. Two miles west of Pottery Hill are two smaller ruins, one rectangular, the other circular.³

Site 221. A large double pueblo, or perhaps two pueblos, is situated half a mile west of Pinedale on a spur running east to Pinedale Creek (Range 20, Township 11, Section 32). The present schoolhouse stands on the south side of the ruin. The rectangular western pueblo, 270 by 185 feet, is one room wide with a central plaza. The irregularly rectangular eastern pueblo is several rooms wide and high, about 200 feet square, also with a central court (Fig. 3c). The walls are good sandstone blocks laid with courses of chinking; in the western pueblo, rooms can be readily made out. Ash heaps extend along the southeast side of the eastern pueblo, but have been turned over by pottery diggers; one new hole is five feet deep. Sherds were collected here.⁴

Site 222. A smaller ruin is said to be three-quarters of a mile west of Pinedale against the mesa and several small house sites within a few miles west.

In addition to the foregoing, we have notes on Homolobi No. 1, and the Cheylon Ruin.

Homolobi No. 1. This is about three miles northeast of Winslow on the north bank of the Little Colorado.⁵ The river has cut its way through the ash heaps close to the south wall of the pueblo. These are five to seven feet deep but mostly sand. Mr. Nelson, by scratching in the bank, could find

¹ Bandelier, *ibid.*, 392; Hough, *ibid.*, 301.

² Hough, *ibid.*, 297.

³ *Ibid.*, 298.

⁴ Fewkes, *ibid.*, 164.

⁵ Fewkes, *ibid.*, 23.

no buff sherds in the lower part although it predominates at the surface. I did not notice such a difference.

Cheylon Ruin. This ruin is situated on a little hill or spur on the west side of Cheylon Creek.¹ The creek empties into the Little Colorado from the south about fifteen miles east of Winslow. The ruin lies near the dam just below the point where the highway crosses the gorge. It consists of a compact section and a hollow rectangle; the whole about 500 by 300 feet. Three potsherd sites with a little masonry but practically destroyed by the creek and buried in sand lie within a half mile north of the highway on the west bank.

¹ *Ibid.*, 30.

RUINS IN THE WHITE MOUNTAINS, ARIZONA.

By LESLIE SPIER.

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WHITE MOUNTAIN POTTERY.

In an attempt to trace the past of the Zuñi people, a considerable section of territory adjacent to their pueblo in New Mexico and a much larger section in Arizona have been surveyed. The three earlier papers in this volume report results obtained by Dr. Kroeber and myself in the drainage area of the Little Colorado, that is from the continental divide in New Mexico westward to Winslow and from the Santa Fé Railroad south to the Mogollon Rim. During the past summer, the White Mountains and the Verde Valley lying between the Mogollon Rim and Salt River were added to this area. This leaves the Tonto Basin as the only considerable unsurveyed portion of an otherwise continuous area. Since it was our intention to maintain this throughout as an empirical study, we have found it convenient to issue reports on the several sections of this area as they were visited. It is now possible to sketch its development in general terms and to particularize on Zuñi participation.

In my second paper, "Notes on Some Little Colorado Ruins," I showed that ruins in the Little Colorado drainage area were distinguished by the presence of yellow or buff pottery: it occurs in such quantities that it might be called the buffware area. The surveys of the past summer suggest some minor modifications and additions to this area. Only two ruins in the White Mountains, No. 261 and Hough's No. 134, contained buff pottery and then only a small amount. I have been shown buff pottery said to have been obtained further west in the upper Tonto Basin close under the Mogollon Rim. Both of these additions extend the area a slight distance out of the Little Colorado drainage and into that of the Salt. On the other hand samples of buffware in the Mearns Collection from the Verde Region must have been obtained from the eastern section close to the edge of the Little Colorado Valley, since I found no such ware at any of the ruins I visited in the Verde Valley proper. None of these changes essentially affect the distribution of this ware.

In some of these ruins on the Little Colorado buffware is associated with red pottery decorated externally in a characteristic fashion. On bowls this commonly consists of a panel encircling the bowl near its edge, built up of two broad bordering bands in black between which geometric figures are drawn in fine lines with white paint. One well-defined figure of this type may be called "dentiform," for want of a

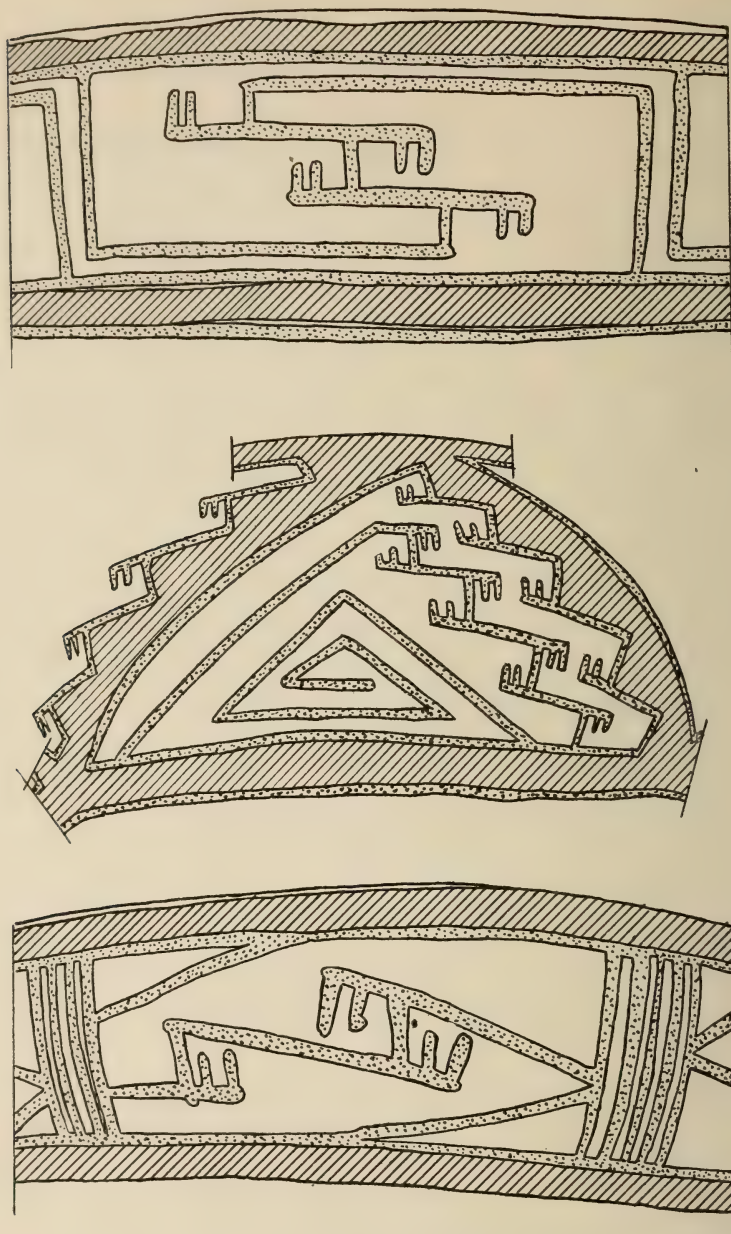


Fig. 1. "Dentiform" Figures from Wallace Tank Ruin (No. 203).

better name. This consists of a straight line bearing two or three short lines at right angles to it at its end and it occurs in a variety of combinations¹ (Fig. 1).

This figure is found on pottery from the following ruins: No. 203, the Wallace Tank Ruin, No. 213, Four-Mile Ruin, No. 214 at the junction of Showlow and Silver creeks, No. 217 at Showlow, and at the Homolobi, Chevlon, and Chaves Pass ruins, as well as appearing in Mearns's sherds from the Verde.

To judge from their pottery, pueblo ruins in the White Mountains undoubtedly belong with this Little Colorado group. More specifically, two ruins contain buffware and at four others I have seen the "dentiform" decoration, viz., Nos. 253, 255, 264, and 267; while it may also occur at two more, Nos. 228 and 274—I am not sure. This gives us a series of connecting elements: the White Mountain ruins share the "dentiform" figure with the Little Colorado ruins, and these latter have the buff, black, and black and red-on-white wares found on historic Zuñi sites.

On the assumption that this is the actual historic sequence I have dealt with the White Mountain pueblos as with the Hecota'utlla group of ruins in the Zuñi country.² The percentages of the various wares in these pueblos is given in Table I. It will be noted that blackware has been omitted. Even among the Little Colorado ruins blackware was extremely difficult to distinguish from corrugated, while here separation was not at all feasible. In Table II the ruins are ranked according to the percent of corrugated and the pottery is grouped by ground or body color. There we see that when corrugated disappears as the dominant type, redware takes its place while whiteware remains stationary. I have also indicated the pueblos at which three color painted ware and three color combination glazed and painted ware occur. From this it appears that the sequence of techniques was first the introduction of three color paint and then of combination glaze and paint.

¹ Fewkes figures an excellent example from Four-Mile Ruin in Plate LXIII, c, of his "Two Summers Work in Pueblo Ruins" (*Twenty-second Annual Report, Bureau of American Ethnology*, part 1, Washington, 1904).

² I do not know that anyone has suggested that the Apache, who now occupy the White Mountains, built these structures. In fact Hodge has shown that the region was uninhabited in the sixteenth century (*American Anthropologist*, VIII, 1895, 230). None of these ruins then can date to historic times.

TABLE I.
PERCENTAGES OF POTTERY AT PUEBLOS.

Site	Corru- gated	Two Color Painted Ware			Three Color Painted Ware			Two Color Glazed Ware			Three Color Glazed & Painted Ware			Tularosa			Size of Sample
		White	Red	Buff	White	Red	Buff	White	Red	Buff	White	Red	Buff	Corru- gated	White	Red	
225	73	15	7			5			7							×	73
228	28	1	19			19						×				×	120
228-upper	×		×			×											
228-lower	×		×						×								
229	37	15	17			20											
237	64	20	8			8											
238	85	9	6											×		×	90
Hough 134	18	5	19	×		53											105
246	25	2	73						1								34
247	45	16	27			12											160
249	18	5	39			38											68
250	13	3	26			40											113
251	19	13	22			36											61
253	20	15	11			33			3								100
254	68	15	9			4								×	×		133
255	×	×				×								×	×		102
258	68	24	4			4								×	×		75
259	81	14	5											×	×		57
261	45	6	27			16								×	×		59
263	39	19	9	1		27								×	×		210
264-upper	54	6	13			9			×						×		103
264-lower	20	22	40			18											90
267	37	15	12			23			1								67
274	58	7	14			19											137
275	×		×			×								×	×		156

TABLE II.
PERCENTAGES OF POTTERY AT PUEBLOS BY GROUND COLORS.

Site	Corru- gated	White	Red	Buff	Three Color Paint	Combination Paint-Glaze	Pueblo Type (Shape and dimensions in feet)	Tularosa			Size of Sample
								Corru- gated	White	Red	
238	85	9	6		×		□, 60×165 { □, 100×90 □, 50×50	×	×		34
259	81	14	5				T, 100×60				59
225	73	15	12		×		□, 75×39	×			73
258	68	24	8		×		□, 65×40	×			57
254	68	15	17		×	×	□, 120×70	×			75
237	64	20	16		×		□, 150×100				105
274	58	7	35		×	×	□, 130×85				156
264	54	6	40		×		□, 120×55				90
247	45	16	39		×		{ O, 160? □, 150×200				113
261	45	6	48	1	×	×	D, 120×150		×		210
263	39	19	42		×	×	□, 115×90	×	?	×	103
229	37	18	45		×	×	D, 140×145				90
267	37	16	47		×	×	□, 200×170	×		×	137
228	28	1	71		×	×	□, 75×85				120
246	25	2	73		×	×	□, 115×115	×			68
253	20	15	65		×	×	□, 135×280	×	×		102
251	19	13	68		×	×	□, 100×70	×			133
249	18	5	77		×		{ □, 325×100 □, 250×100				61
Hough	134	6	76	×	×	×	O, 170				160
250	13	3	84		×	×					100

All of these results are a striking parallel of conditions in the Hecota'-utlla group near Ramah, where redware displaced corrugated ware with whiteware remaining a constant element, while at the same time the sequence of new techniques was first three color paint and then combination glaze and paint. Both series parallel the sequence of techniques found by Nelson and Kidder in the upper Rio Grande Valley.

Changes in the shape and size of the pueblo are not marked, but the tabulated data suggest that the later pueblos were somewhat the larger, as was the case in the Hecota'-utlla group, and that the pueblo built as a hollow rectangle also became more common.

Percentages of pottery in the small ruins in the White Mountains are given in Table III. The data are too few for treatment similar to that for the pueblos.

A number of ruins in this area contain Tularosa-San Francisco pottery: one cave, Site 239, contains nothing else. This pottery is of three types: corrugated, with narrow coils, fillet edge and polished black interior; plain redware also with a fillet edge and polished black interior; and whiteware decorated with a black pigment which is either a very glossy paint or glaze. I have noted the presence of these types in the tables. Apparently there is no chronological distinction between the several types. If we consider these data together with that for Little Colorado ruins¹ however, it appears that Tularosa wares occur in the small ruins of both areas—presumably the earliest—and in pueblos of the middle period in the White Mountains, but not in the Little Colorado pueblos and not on historic Zuñi sites. This temporal relation suggests that the glossy black paint on the whiteware may be historically related to an early glaze.

At none of the ruins in the White Mountains were deep refuse heaps found, so that stratigraphic work was out of the question. Sherds obtained from the upper and lower parts of refuse heaps in Sites 228 and 264 show some differences, but these do not appear significant to me.²

¹ This volume, pp. 342-343.

² The question raised on p. 361 whether buffware appears only in the upper part of the ash heap at Homolobi No. 1 near Winslow is answered by the following data:—

	Corrugated	Two Color Painted Ware			Three Color Painted Ware			Size of Sample
		White	Red	Buff	White	Red	Buff	
Surface (percent)	41	6	11	41		1		145
Upper Part	×	×	×	×		×	×	
Lower Part	×		×	×				

A large proportion of the corrugated ware is buff in color.

TABLE III.
PERCENTAGES OF POTTERY AT SMALL RUINS.

Site	Corru- gated	Two Color Painted Ware			Three Color Painted Ware			Two Color Glazed Ware			Three Color Glazed & Painted Ware			Tularosa Ware			Size of Sample
		White	Red	Buff	White	Red	Buff	White	Red	Buff	White	Red	Buff	Corru- gated	White	Red	
223	38	56	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	55
224	82	18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	111
255	×	×	.....	.....	.....	×	.....	.....	.....	.....	.....	×	.....	×	.....	.....	42
260	59	36	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	×	×	.....	85
270	46	35	13	.....	.....	6	.....	.....	.....	.....	.....	.....	.....	×	×	.....	114
272	50	41	4	.....	.....	5	.....	.....	.....	.....	.....	.....	.....	×	×	.....

Another feature shared with ruins in the Zuñi and Little Colorado areas is the poor quality of the glaze.¹

¹ None of the ruins I visited in the Verde Valley—northward from Camp Verde—belongs with the groups described, except by reason of an architectural similarity. Here are cliff-houses and pueblos of the regular rectangular room type built of stone like others of the northern Pueblo area, but with crude pottery. These vessels contain a large amount of stone tempering, are soft and crumbling, walls thick, unpolished, and for the most part unslipped. About two-thirds are reddish, the remainder black; but these may not be separate varieties. With these is a very small quantity of black-on-white and corrugated ware. Neither Mindeleff nor Mearns describe pottery from these ruins.

NOTES ON THE RUINS.

WHITE RIVER.

The White Mountains along the upper reaches of the North Fork of White River are too rugged to permit extensive occupations. In the general neighborhood of Cluff Cienega, however, ruins may be located.

Site 223. A small ruin lies on the west side of the road from Cluff Cienega a mile or so above Robert's Ranch Ranger Station. It is built of rough lava blocks; rectangular, 30 by 20 feet; and has been partly excavated. A sample of the few sherds seen on the surface was collected at random.

Hough 129. A small pueblo ruin near Interior Sawmill was excavated by Dr. Hough.¹

Site 224. The road to Fort Apache runs along a ledge or plateau a considerable distance above the North Fork. A number of small-house ruins are scattered along the ledge. A small-house ruin, like Ruin 223 and measuring 20 feet square, is on the east side of the road about five miles south of Interior Sawmill. A random collection of sherds was made. Two more similar ruins are a short distance south.

Site 225. A small pueblo of the same rough construction lies a mile south of No. 224 on the east side of the road. It measures 100 by 60 feet, possibly two stories high at the center, with a 60 foot wing at one side. An excavated room is roughly 10 feet by 12. Two more small-house ruins are within a mile south and a third half a mile further on. There may be others in the vicinity.

Hough 131. Pueblo ruins noted by Hough² and described by Bandelier³ are on the old Cooley ranch, eight miles above Fort Apache.

Site 226. Two small peaks on the east side of North Fork opposite the agency at Whiteriver are covered by an indefinite small ruin built of sandstone. Skeletons have been found to the southeast. Corrugated, black-on-white, and a little black-on-red pottery were seen.

¹ Hough, Walter, "Antiquities of the Upper Gila and Salt River Valleys in Arizona and New Mexico" (*Bulletin 35, Bureau of American Ethnology*, Washington, 1907), 80: "Archæological Field Work in Northeastern Arizona. The Museum-Gates Expedition of 1901" (*Annual Report for 1901, Smithsonian Institution*, pp. 279-358, Washington, 1903), 297.

² Hough, "Antiquities of the Upper Gila and Salt," 80.

³ Bandelier, A. F., "Final Report of Investigations among the Indians of the Southwestern United States, Carried on Mainly in the Years from 1880 to 1885" (*Papers, Archæological Institute of America, American Series*, vol. 4, part 2, Cambridge, 1892), 394.

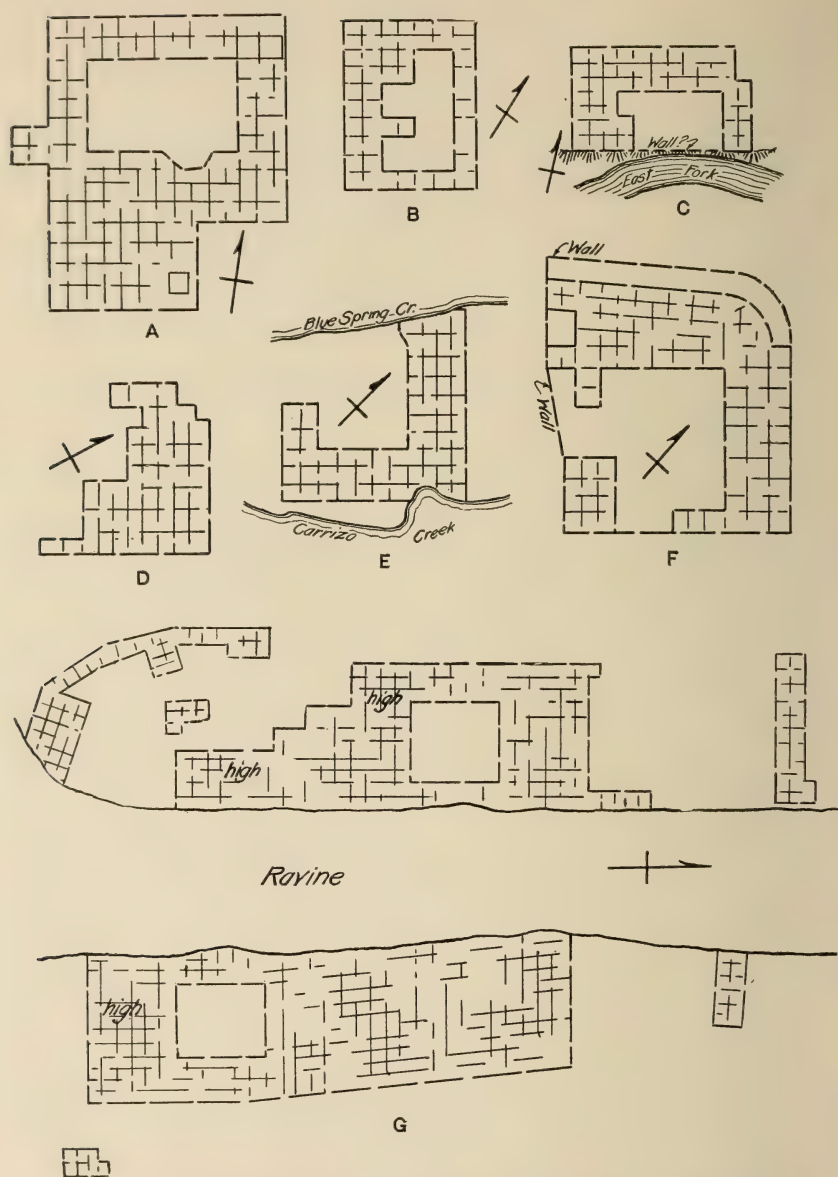


Fig. 2 Plans of Ruins. a, Ruin 228; b, Ruin 229; c, Ruin 237; d, Ruin 253; e, Ruin 264; f, Ruin 274; g, Hough's Ruin 134. Scale: 1 in. = 135 ft.

Site 227. A short distance south is a small ruin just above the White-river bridge. It was built of small sandstone blocks, but is nearly leveled; measures 20 by 35 feet (nine rooms) with an additional room alongside. There may be a circular kiva, 20 feet diameter, to the south. Corrugated, black-on-white, black-on-red, and a little black and white-on-red pottery was seen.

*Site 228.*¹ A large rectangular pueblo is situated a mile and a half east of Fort Apache on the south side of East Fork just above the junction with Seven Mile Creek.² The structure measures about 200 feet by 170, with a rectangular court 100 feet across (Fig. 2a). It was built of sandstone blocks with regular courses of chinking. Several rooms have been dug into by Dr. Hough and others. Sherds are relatively scarce on the surface and the ash heaps at the southeast corner and to the west (the cemetery) are only 12 to 18 inches deep. Sherds were collected from the surface and the upper and lower parts of the ash heaps. Excavations in the cemetery have now cleared it completely. Two burial urns, ollas covered by inverted bowls, containing partly burned human bones were found: one also contained part of a bowl. Two adult skeletons were found: extended, head to north, face up, symmetrically placed side by side, left arms akimbo, right arms extended, that of one skeleton underneath the other. A bowl lay on the right shoulder of one. A skeleton of a child had a square turquoise pendant near the right ear, a broken arrow point, and small shell beads at the wrist.

Site 229. Half a mile east of No. 228 on the higher ground on the opposite side of East Fork is a rectangular pueblo. It is not so well constructed as No. 228. It measures 115 by 90 feet with a rectangular court (Fig. 2b). Fifteen yards away is a structure of one or two rooms. Near this were found two burial urns containing burned bones. The ash heaps close to the east side of the pueblo have been dug up. Sherds are not plentiful.

A small-house ruin lies on the opposite side of East Fork. Turquoise has been taken from a spring, where there may be a small-house ruin, on a mesa in the southeast angle of Seven Mile Creek and East Fork.

Sites 230-233. Four small-house ruins are on the bluff north of East Fork about one quarter mile west of East Fork Day School. Three

¹ Sites 228 and 229 are evidently Hough's 133 and 132 ("Antiquities of the Upper Gila and Salt," 80-81), since there are no ruins on the North Fork as he describes but in corresponding positions on the East Fork.

² Bandelier, *ibid.*, 395.

houses had only one or two rooms; the fourth three rooms and measured 30 by 20 feet. Pottery is corrugated and black-on-white.

Sites 234-236. Across East Fork from the Day School are three similar small-house ruins; two with two rooms, one with one. Pottery is similar.

Site 237. A pueblo ruin lies on the brink of the bluff which rises on the north side of East Fork one mile east of the Day School. It is bracket-shaped, with the open side at the bluff edge possibly closed by a wall; is built of rough sandstone and lava boulders, and measures roughly 120 by 70 feet (Fig. 2c). The cemetery to the west has been dug into. A random collection was made from among the few sherds seen.

A small cliff ruin, possibly only a storehouse, may be seen high up on the cliff face about a mile upstream.

Site 238. A pueblo ruin stands in the bottom land on the north side of East Fork about two miles or more above Site 237. It was built of sandstone; is now low and indefinite, but appears to be bracket-shaped, the open side facing south. The court is about 60 feet square, the arms roughly 60 feet long by 20 and 40 feet wide, and the rear section 165 feet long extending beyond the side building to the east. Sherds were collected at random here.

Site 239. Eight or nine miles above Fort Apache or about a mile above Site 238 is a cave in the cliff north of East Fork. Walled storage chambers are located near the entrance and a burial site 200 (?) feet within. The cave has been ransacked, but I found unburned and calcined bones, sticks, charcoal, corncobs, squash seeds, and piñon nuts, as well as yucca cords, strung and loose shell beads, and a bone pendant. The pottery is the corrugated and plain red with polished black interior of Tularosa type.¹

Sites 240-242. There is said to be a little ruin a mile or so above this cave, a pueblo ruin on Ryan's ranch about three miles north of Sharp's ranch, and also at Bill Ryan's ranch on Little Bonito Creek.

Site 243. A small-house ruin, 60 by 20 feet, is on the ledge on the west side of North Fork opposite Fort Apache hospital. Pottery is corrugated, black-on-red, and black and white-on-red: sherds are scarce.

Site 244. A small ruin of a few rooms, 40 feet long, stands on a rise a quarter mile east of Canyon Day School on the north side of White River. Sherds are corrugated and black-on-white.

¹ Specimens in the Field Museum referred to by Hough, *ibid.*, 81, may be from this cave.

Site 245. A little lava peak rises just west of the Day School; on it is a small ruin, indefinite but conforming to the top, 100 feet long by two or three rooms wide.¹ Part of the ruin is also on the shoulder of the peak. Pottery is corrugated, black-on-white, black-on-red, and black and white-on-red.

There are pictographs on the opposite (west) face of the gorge and two small-house ruins on the ledge above.

Site 246. A small ruin is on a hilltop on the south side of White River a half mile west of the Day School. Built of sandstone and fairly well defined, it is roughly a rectangular block 75 feet by 85, with a two-roomed structure nearby.

There are said to be small-house ruins about Chiricahua Beef Spring, which is near the top of the mesa about a mile south of Site 245.

Site 247. A small pueblo lies on a hill at the eastern foot of Kelley's Butte, about two and a half miles west of Canyon Day School. It is roughly rectangular, measures 120 feet by 55, with two outlying buildings of one and three rooms. Sherds were collected from the surface at random.

Hough 134. Opposite Fort Apache is a plain which extends to the west to Saw Tooth Mountain. Near the eastern foot of the peak, a mile and a half from it by air line and three miles west of the Day School, is a large pueblo ruin lying on both sides of a ravine, forty or fifty feet deep.² It was somewhat rambling, built of sandstone, and two stories high in the highest parts. East of the ravine the main block covers an area 325 by 100 feet, on the west side the main block is roughly 250 by 100 feet (Fig. 2g). Sherds are plentiful around the eastern block and undoubtedly were dumped into the ravine, whence they were carried by storm flow. Nowhere could stratigraphic work be done. Rock walls of the ravine just above the ruin would have served for an excellent tank: there is no water within several miles today. Sandstone and lava manos and metates were seen.

Two ruins of one room each lie in the plain a quarter mile east of this pueblo.

Site 248. There is said to be a pueblo ruin built of lava blocks together with small-house ruins at Navajo Bill Spring (at the head of Priebe Creek?) about eight miles west of Canyon Day School.

There are said to be a few small ruins and caves south of Black River below Turkey Creek and above White River.

¹ This or the next site may be No. 135 of Hough, *ibid.*, 81.

² Hough, *ibid.*, 81; Bandelier, *ibid.*, 396.

CEDAR CREEK.

Site 249. The Cibicue road skirts the north end of a high and very narrow mesa about three and a half miles east of Cedar Creek or two miles west of Saw Tooth. The southern end of this mesa is capped by a small pueblo ruin which conforms to the outline of the mesa. It is roughly a right-angled triangle; one side 100 feet long, the base 70 feet, and tapering to one room 10 feet wide. There is no water nearby and the mesa walls are sheer.

Site 250. Two miles west in the flat there is a circular pueblo built of sandstone and still standing high. In plan it is nearly a perfect circular ring 170 feet outside diameter; three rooms wide on the southern sector, elsewhere two wide; rooms placed radially. It was probably two stories high. Lower structures fill the greater part of the interior court. Three or four smaller structures are on a hillside a few yards west. The largest is L-shaped; the long arm 180 by 50 feet, the shorter 75 feet long and one room wide for the most part. So far as an inspection during a storm would permit, I judge that the sherds at these structures are the same as those at the circular pueblo. Sherds are not abundant.

Site 251. A dry wash joins Cedar Creek just south of Silver Butte. On the point of a mesa in the fork is a pueblo ruin consisting of a rectangular block 135 by 100 feet, two or three stories high, and with a small court in the center; this forms one end of a court the two adjoining sides of which are 180 feet long by 33 and 42 feet wide, and the fourth side formed by wings of the side buildings which nearly meet. These buildings were one story high.

There is said to be a small ruin and terraced slopes on a small peak near which the road passes three miles west of the Cedar Creek crossing.

Site 252. A ruin of about five rooms is on the bottom land of Cedar Creek opposite Silver Butte. Pottery is corrugated, black-on-white, black-on-red, and black and red-on-white.

A small ruin of a few rooms is said to be on Silver Butte.

Site 253. A small pueblo ruin is on a mesa south of the junction of West Cedar Creek. It is somewhat L-shaped (Fig. 2d), since the main portion was two or three stories high, with a wing of one story. Its overall dimensions are 115 by 115 feet.

There are said to be no ruins on West Cedar Creek, although the Apache have farms there.

Site 254. A small ruin is on a hill on the east side of Cedar Creek near the junction of Middle Cedar (Arrow) Creek. Although it has been

rebuilt by Apache like many others, the original walls are fairly distinct. It is rectangular, 65 feet by 40.

Site 255. A small cliff ruin is located on the east side of Cedar Creek about a mile and a half above the Arrow Creek junction. A single line of rooms is built in a shallow cave, which range in width from 10 feet at one end to 4 feet at the other, and have lengths of 10 and 6 feet. The sandstone walls still stand and rafters are present 5 feet above the floor. Walls show alternate courses of chinking and are plastered inside. Interior doorways measure 36 by 18 inches, are 6 inches off the floor, and have stone and stick lintels. Sherds are very scarce.

Site 256. On the west side of Cedar Creek about a mile and a half above Site 255 is a small semi-cliff-house against the base of a cliff. Both end walls of a single room, 12 feet long, stand, but no front wall. No sherds were seen; it may have been a field shelter.

Site 257. A series of oval storage chambers were seen a mile (?) above the junction with Cedar Creek on the west side of Arrow Creek. Sherds here are corrugated, black-on-white, and redware.

Two small ruins are reported to be in the bottom land a mile or so above this.

Site 258. A small ruin lies on a hill on the east side of Arrow Creek about three miles above its junction with Cedar Creek. It measures 75 by 30 feet, but is low and indefinite.

Site 259. A small pueblo ruin stands on a high hill on the east side of Arrow Creek more than half a mile north of Site 258. It is low and indefinite, but apparently consists of two blocks, the main portion 90 by 100 feet, the other L-shaped with 50 foot arms, 25 feet wide.

Site 260. A trail leads from Arrow Creek over Big Mountain and down Corduroy Creek to the settlements on Forestdale Creek. On a slight rise near the northwest base of Big Mountain is a small indefinite ruin, roughly built of lava blocks. Its total length is 60 feet. Nearby is a lava boulder with a cup-like milling hole.

CARRIZO CREEK.

Site 261. A pueblo ruin is located on the north side of Forestdale Creek where it is reached by the old road from Adair. Hough has given an extended description¹ and notes three more ruins in the vicinity.

¹ "Archæological Field Work in Arizona," 289-297, also "Antiquities of Upper Gila and Salt," 80, No. 127.

Site 262. A small ruin lies south of the Cibicue road about two miles west of Carrizo Creek. There are two buildings, 40 by 25 feet and 20 feet square. Pottery is corrugated and black-on-white.

Site 263. On a knoll on the east side of Carrizo Creek perhaps two miles below Limestone Creek is a small D-shaped pueblo ruin, consisting of a rectangular portion 120 by 75 feet with a semicircular building in the rear leaving a court 75 feet across. The rectangular block is a high pyramid, but probably nowhere more than one story high as Bandelier shows.¹ The semicircular part is level, one room wide and also one story high.

Nearby is a small-house ruin, now nearly obliterated.

Another ruin lies a mile upstream on the same side.

Site 264. A pueblo ruin is situated in the junction of Blue Spring Creek with Carrizo Creek. It is L-shaped, the main block 130 by 40 feet, the arm 85 by 35 feet (Fig. 2e), but portions have been carried away by both streams. Considerable refuse appears on both banks but this is back-fill in the rooms, all outside refuse heaps having been carried away. Sherds were collected at random from the uppermost and lowest parts of this back-fill. A skeleton lay four feet under the outer wall on the original surface; on top of the head was a red bowl containing a small bowl, dipper, and jar. Another skeleton was found on the floor of a refuse-filled room with turquoise at neck and a corrugated bowl at feet.

A small ruin is said to lie on the ledge west of Carrizo Creek opposite Site 263, but I could not find it.

Site 265. On the point of the mesa in the forks behind Site 263 is a small ruin of half a dozen rooms. Pottery is corrugated, black-on-white, and redware.

Site 266. South of Blue Spring Creek opposite Site 263 is a small ruin of four partly excavated large rooms. Sherds are much like those of the pueblo ruin.

Two small ruins are said to lie on the bottom land of Carrizo Creek, one near the junction of Deer Spring, the other a mile above. Similar small ruins are said to be on the points of mesas in the vicinity of Phoenix Park and Buckskin Creek further up Carrizo Creek.

CIBICUE CREEK.

Site 267. A pueblo ruin stands in the bottom land near Cibicue Creek opposite the Mission. The pueblo is D-shaped, with a base 140

¹ Bandelier, *ibid.*, 399-401.

feet long and measures 145 feet transversely. It seems to have originally enclosed a large court but this is now entirely filled by lower buildings. All interior walls are indefinite. Some ash and sherds show in the plowed field southwest.

Site 268. A small ruin, 40 feet by 30, is on the east side of Cibicue Creek about 200 yards above the Day School. Pottery is corrugated and black-on-white.

A still smaller ruin is said to lie on the point of a low mesa on the west side of Cibicue opposite this one.

Site 269. A small ruin consisting of two buildings of two rooms each is on the west side of Salt Creek, nearly three miles above the Day School. Pottery is corrugated and black-on-white.

Site 270. An eighth of a mile above the last is a larger ruin. This is three rooms (25 feet) wide, one row extending 95 feet, the others 50 feet.

Site 271. Half a mile above the junction of Salt Creek on the west bank of Cibicue Creek is a curious small ruin. It seems to be only partly finished, yet some sherds are scattered about. A single line or row of stones marks the walls, like the boulder-marked sites of the Rio Verde. One room, 13 by 33 feet, has no fourth wall; another building has a room 16 feet by 13, with the side walls extending 8 feet more and without a fourth wall. These might be passed over as unfinished buildings, but for the association with somewhat unusual corrugated and black-on-white pottery.

Site 272. Half a mile west of Site 270 and near the north bank of Salt Creek is a small ruin of the same sort. One building is an L with arms 35 and 40 feet long; nearby is a second consisting of a three-sided room 15 feet by 40. Sherds are also similar.

Site 273. On a ridge 100 yards north is a small ruin, 45 feet by 20, with outlying rooms. The pottery is corrugated, glossy black-on-white, and black-on-red.

There are said to be no ruins further up Salt or Cibicue creeks, although Apache farms are on the latter. Ruins were also spoken of as "way down" Cibicue Creek, probably near Salt River.

Site 274. A pueblo ruin stands on Blue House Mountain about a mile east from the summit. It covers a hilltop with a low encircling wall which forms a terrace. The main building is L-shaped with arms roughly 150 feet by 50 and 100 feet by 45 (Fig. 2f).

A ruin was said to be located southwest of Blue House Mountain and south of Brush Mountain.

Site 275. There is a pueblo ruin at Grasshopper Spring west of Cibicue Creek, consisting of one large building divided by a flowing spring with numerous small buildings scattered around.

Ruins reported on the Canyon Creek drainage, including a large cliff-house on Oak Creek, were not visited.

HISTORICAL RECONSTRUCTION.

Taking the data for the whole surveyed area, I suggest the following scheme of historic interrelations.

In the first place, there are in this area a fairly large number of small ruins. The earliest type (p. 293) was presumably the oval, semi-subterranean "slab-house" which was found in the Zuñi Valley. Pottery here was simply corrugated and black-on-white. The small rectangular house which followed it is found in all parts of the area. The pottery associated with this is corrugated, black-on-white, and black-on-red. The differences between the small ruins lie largely in the decorative style: a difference too slight to permit of advantageous study at present. Some Tularosa pottery is also found in these ruins.

However, when we consider the pueblo ruins, some fairly definite historic relations may be seen. We first find two groups of ruins; one in the White Mountains, the other the Hecota'utlla group centering around Ramah in the upper Zuñi Valley. Although these two regions are some distance apart, there are no intervening barriers. These groups have had a parallel development. At the outset corrugated was the prevailing ware but was displaced by redware, while whiteware remained throughout a relatively constant minor ware. Corrugated may have been slightly more prominent in the White Mountains, whiteware at Ramah. Three-color painted decoration—in this case the addition of decoration in white paint to the black paint figures on redware—appears in both groups under the same conditions, and presumably at about the same time. Next glaze technique appears in both groups, black glaze being substituted for black paint without any marked change in decorative style. The glaze is applied to white and red pottery giving us the two color glaze technique, but at the same time it is used in three color decoration. Hence the development here did not parallel that in Nelson's Tanoan area, where two-color glaze appeared as a definite type before three-color combination glaze and paint. Here glaze was clearly introduced from outside, presumably from the upper Rio Grande. In this connection it is significant that the glazes of all periods in this area are distinctly inferior to those of the Rio Grande. At about the same time the pueblo was introduced as a definite architectural type. It does not seem to have grown out of the small ruin in this area—at least this is distinctly so in the Ramah region. Pueblos in this region are somewhat larger than those in the White Mountains.

These two ceramic groups present similarities in decorative treatment; at least this is noticeable in redware. But one difference may be pointed out in the white paint figures; at Ramah broader lines and more diagonal step and volute patterns were used than in the White Mountains. Tularosa pottery is also found in both groups of pueblos as in the earlier small ruins.

Now come shifts of population: the Ramah group disappears from the area I have surveyed and Tularosa pottery never appears again. The White Mountain group moved northward to the Silver Creek section, where a new development began, shared with the group on the middle Little Colorado centering around Winslow. During this period corrugated ware continued to disappear but began to be replaced by plain blackware, which is clearly a derivative of it. Redware becomes the dominant type—possibly half of all pottery—and again declines. Here, as in the White Mountains, the “dentiform” figure appears on it. Small quantities of whiteware continue to be made. Buffware, which appeared in a few pueblos of the White Mountains is now found in larger quantities. It is a very minor constituent in the Silver Creek ruins, but a much larger one in the western group and also in historic Zuñi pueblos. The significance of these proportions is not clear, possibly because my survey did not extend north of the Little Colorado where there are ruins also containing buffware. The pottery of the Silver Creek region is more nearly like that of the earliest Zuñi site near Zuñi Pueblo. This would imply that the Zuñi have moved up the Little Colorado-Zuñi Valley to their present location. A possible explanation—I do not mean to suggest that it is necessarily the fact, since I have not investigated the buffware area north of the Little Colorado—is that buffware did not develop to any extent until the Zuñi reached their historic habitat. This would presuppose a second group of people remaining on the Little Colorado. Fewkes and Hough believe that these western ruins relate to the Hopi or some constituent group of that tribe.

Let us return to the problem with which we set out: what could be learned of the former communities of the Zuñi that bears on their present life. Formulating this question more specifically we were, first, to investigate the relations between the present pueblo and the several pueblos attributed to the Zuñi of the period of the conquest by early documents and native statements; and, second, to discover their prehistoric location and cultural leanings. Dr. Kroeber, who brought a new method to the attack, showed that the situation was even more complex than the documentary confusion implied. My excavations into the base of

modern Zuñi revealed its growth since the foundation just prior to the Spanish advent. Taking the earliest pottery types there as a point of departure, we concluded that the Zuñi inhabited the pueblos, Hawwikku, Kettcippawa, Kyakkima, and Mattsakya, together with the unidentified "Aquinsa," immediately before concentrating in their present town. All of our evidence indicates that neither Pinnawa nor Hallonawa were Zuñi ruins of the historic period as had been supposed by earlier investigators. The solution of the second part of our problem is given in the foregoing historical reconstruction. The Zuñi originally lived further to the westward and their pottery at least showed close resemblance to that of the Hopi.

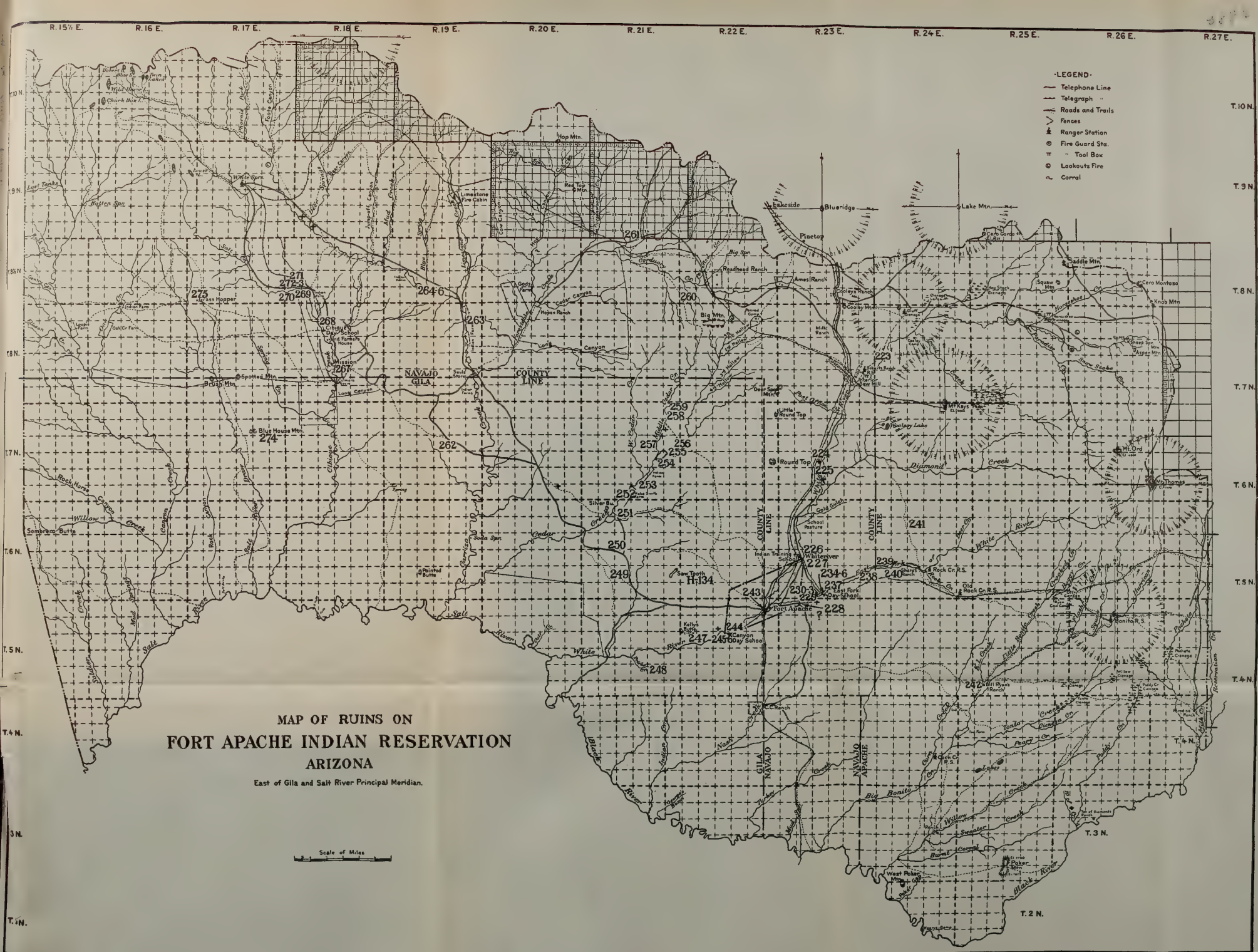


Fig. 3 Map of Ruins in the White Mountains.

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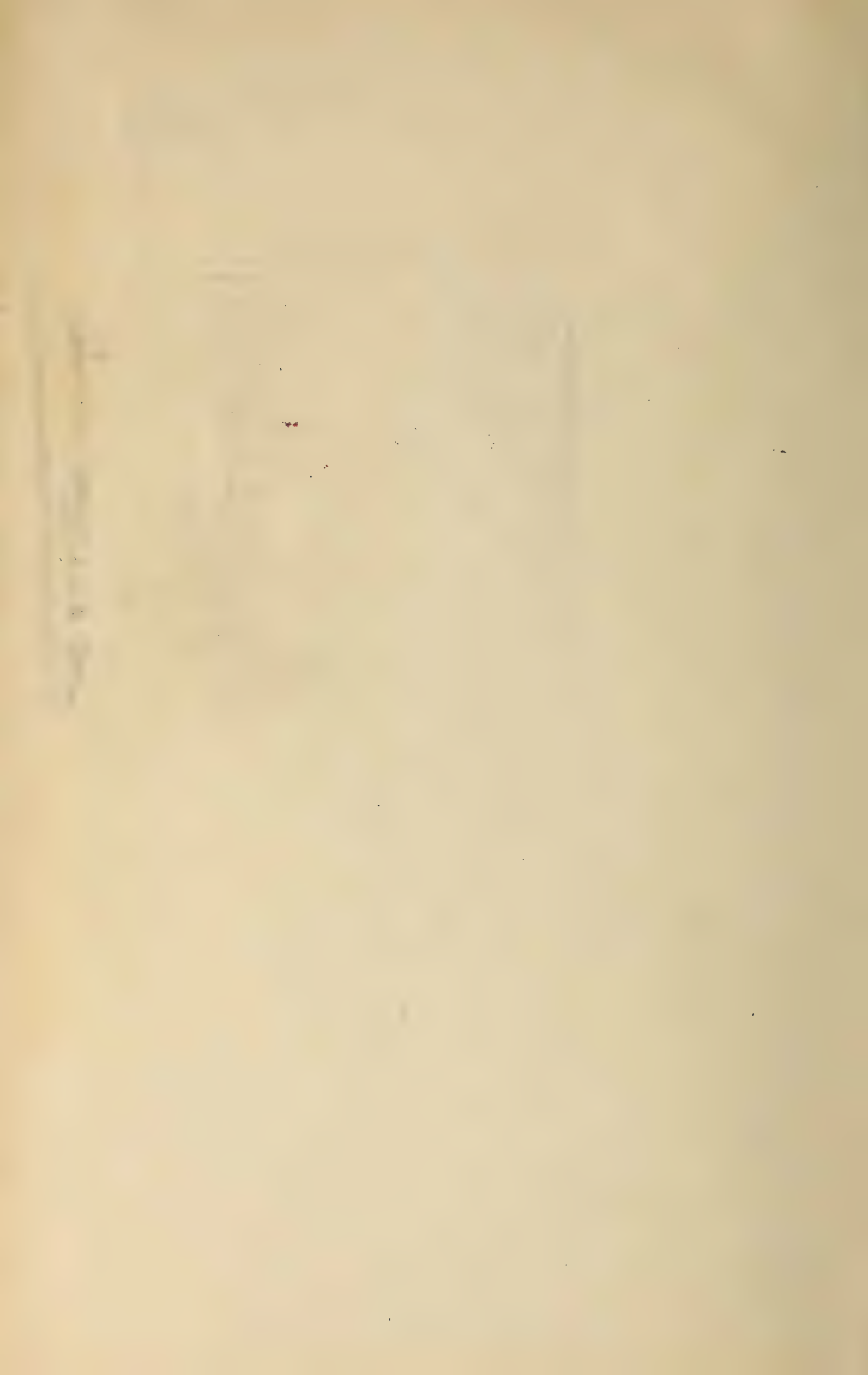
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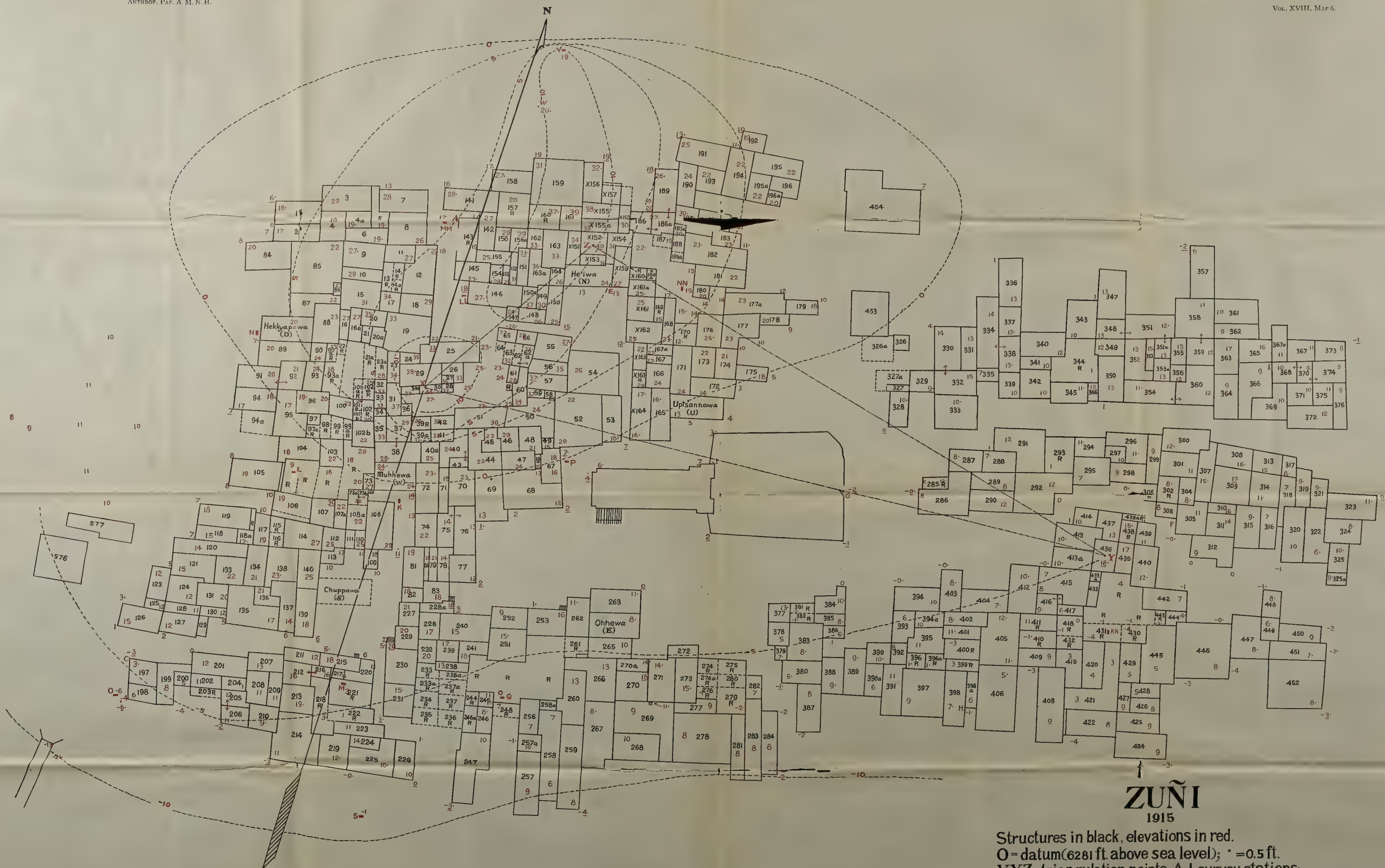
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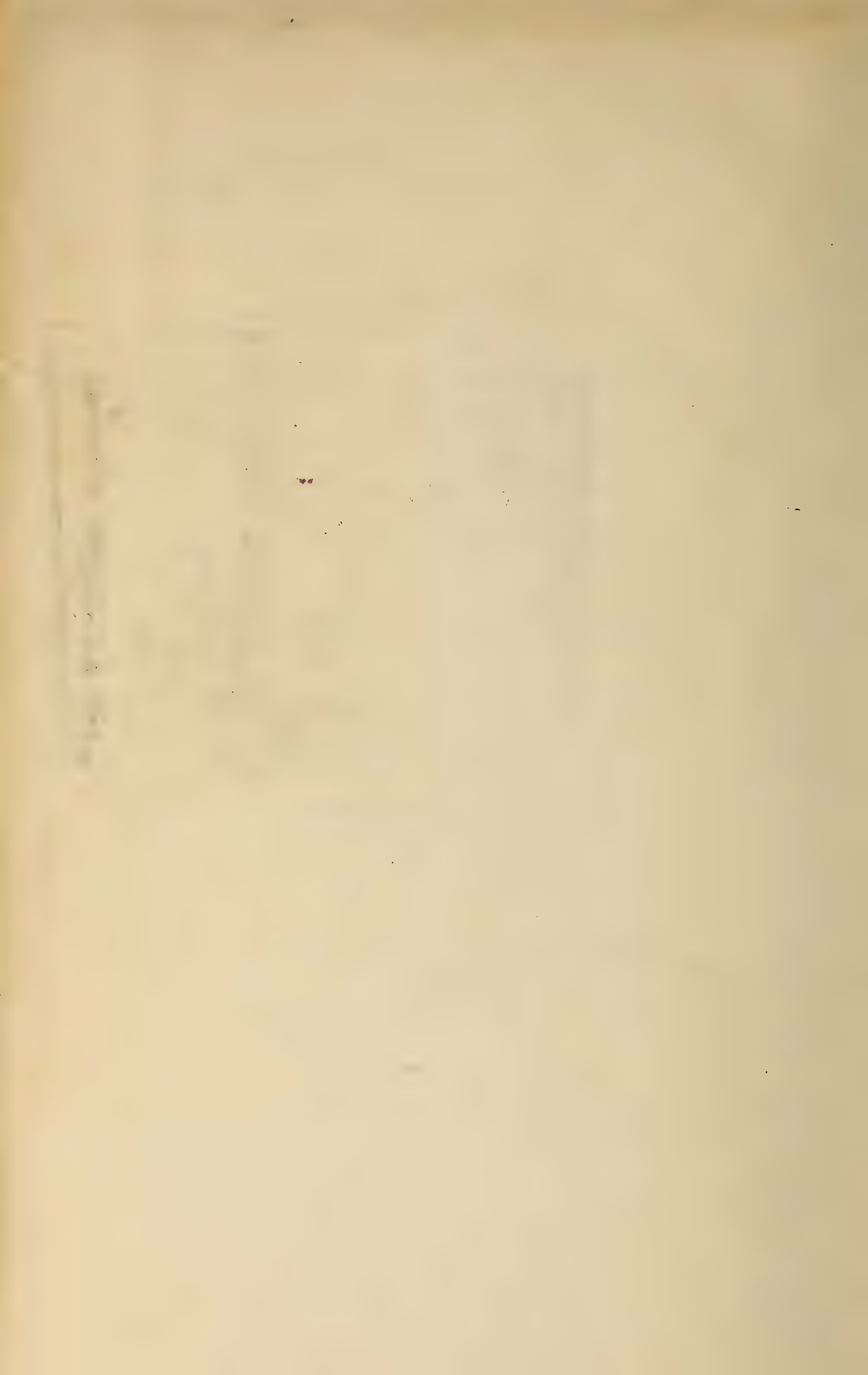




ZUÑI 1915

Structures in black, elevations in red.
O = datum (6281 ft. above sea level); * = 0.5 ft.
X, Y, Z, triangulation points; A-I, survey stations;
K-W, KK-NN, excavations. The broken lines give
the probable contours of the site before settlement.

SCALE
0 25 50 100 ft.

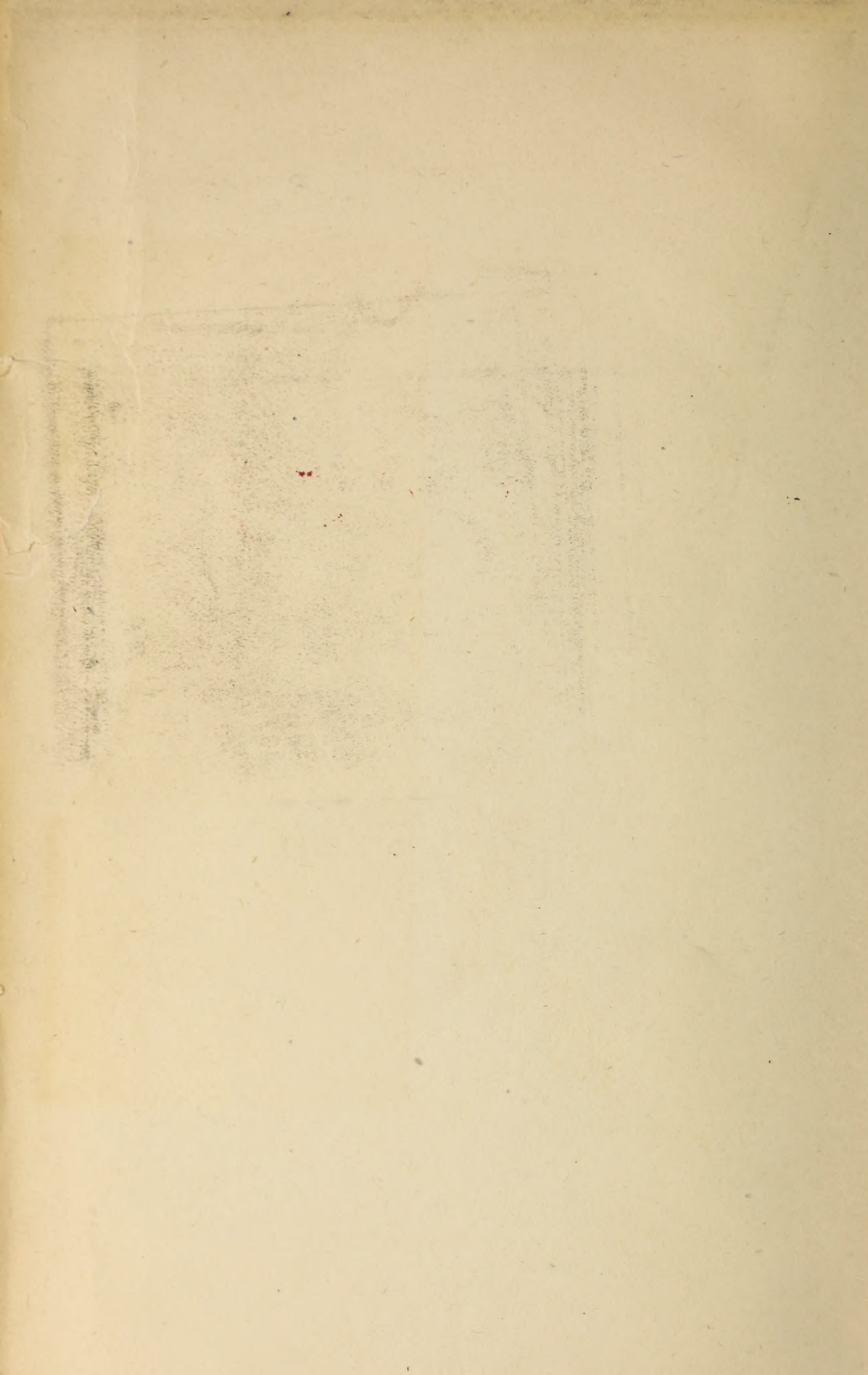


MAP OF ZUNI VALLEY AND PLATEAU

Scale of Miles



Fig. 2. Map of the Zuni Valley and Plateau.



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